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PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*On Enlargement of the Infantile Liver.* By A. JACOBI, M.D., Physician to the Canal St. Dispensary, N. Y.

THE diseases of the infantile liver have attracted very little attention from the majority of even eminent writers on infantile pathology. The symptomatology given in many books is quite obscure, the pathological anatomy seldom answers the description of the diseases, and even their denominations and classifications fail to give an idea of the cases to which they have been applied. Thus, the only notice on enlargement of the infantile liver contained in the excellent work of Drs. Rilliet and Barthez, beside an article on fatty degeneration of that organ, is found under the head of "hepatitis *or* conjestion." Under this name they describe an affection, said to be very rare in children, as they have seen but six cases altogether. It is reported to "commence by a slight febrile movement, accompanied by increased thirst and loss of appetite. At the same time, or shortly afterwards, an icteric tint is perceived, limited at first to the conjunctivæ, and slightly pronounced, but soon becoming very marked. The liver then augments in volume, passes the ribs, extends to the epigastrium, and ascending in the hypochondrium, increases the dullness of that region. The tumor is ordinarily indolent, easily circumscribed when the abdomen is soft and flexible, but is defined with difficulty when it is distended. At the same time that the jaundice and tumefaction of the liver are manifest, the urine becomes changed, and of the color of beer. The stools were few, liquid, and discolored. At the end of a variable time, the fever diminishes and disappears; thirst is no longer felt; the appetite is recovered. The tumor

of the liver, which has progressively diminished, still continues; it, however, soon disappears. The icteric coloration is in part effaced. The urine recovers its normal color, and at the end of twenty or thirty days all the morbid symptoms have disappeared. The acute symptoms have usually disappeared some days before." Of R. and B.'s six patients, two were four years old, two five, one twelve, and one fourteen. Five recovered; one, a tuberculous child, died.

The description of the disease, as given by these celebrated authors, and the results of the single post-mortem examination, recorded in their well-known manual, and the almost perfect silence in medical literature on this and similar subjects will, perhaps, justify some clinical and anatomical remarks on what we understand by enlargement of the infantile liver; the more so, as we consider it of much more frequent occurrence in infantile life than has been supposed, and as, therefore, of great practical interest.

Enlargement of the liver must by no means be considered as a uniform condition of this organ. As the name applies to size only, the nature of the enlargement, the pathological alteration of the organic tissue will always be the important question. Thus, the liver is found enlarged in both acute and chronic hyperæmia, in true hypertrophy of the parenchyma, in exudation of coagulable matter into the tissue, in fatty and steatomatous degeneration of the substance. Of all these various conditions, the real hypertrophy of the liver ought to be taken as enlargement, in the strictest sense of the name. It is not a very frequent occurrence, taken in proportion to other affections, and is brought on, in the majority of cases, by mechanical hyperæmia of the hepatic tissue, produced by diseases of the lungs or heart. The size of the organ is increased in all its diameters, its consistency is greater, its color darker, and its substance hyperæmic; its texture exhibiting no alteration whatsoever, not even by the most scrutinizing microscopical inspection. Generally, cases of enlargement of the liver are the consequence of a hyperæmic condition, either acute or chronic, the latter being generally induced by diseases of the lungs or heart, prohibiting a full stream of blood entering the right heart from the inferior cava. Acute hyperæmia will rarely produce alteration of the hepatic structure; even chronic hyperæmia may exist for a while without giving rise to pathological degenerations. The amount of blood contained in the liver will be larger, the color darker and uniformly blackish red, and its diameters either moderately or considerably increased. Now, such cases of enlargement of the infantile liver as will not be connected with entire degeneration of the hepatic

tissue (as fatty or steatomatous degeneration), being the direct consequences of a hyperæmic condition of the substance, will form the principal object of the next pages. The hyperæmia itself will be considered as the result of numerous affections of other organs, thus proving the intimate connection between the different parts of the organism.

It is a singular fact that the large glands of the human body in general, and the liver in particular, have required a long time to become known to physiologists, in their normal condition, even after pathologists had long undertaken to classify the abnormities existing, or believed to exist, in both their size and structure. Enlargement of the liver was long spoken of as a common disease, before the normal size of the organ was enquired into. That such enquiries were more than merely interesting, is sufficiently proven now that even the exact measures and weights of the liver, as given by such an eminent pathologist as Frerichs,* cannot be deemed sufficient to cover all the wants. The proportion of the weight of the liver, and the body in general, is found, by Frerichs, to vary from 1 : 17, and 1: 50, the average proportion, in middle age, being from 1 : 24 to 1 : 40. Where, then, does the size and weight cease to be normal, or begin to be enlarged?

The liver is largest, in proportion, during fœtal life. After birth its growth does not keep pace with that of the body in general, although the opinion of Portal and Meckel, who stated the liver of a new-born infant to be absolutely 25 per cent. larger than that of a child of eight or nine months, has not been confirmed by recent examinations. In new-born infants the liver extends in front of the then nearly vertical stomach, so far into the left hypochondrium as to touch the spleen, the left lobe being nearly as large as the right one. The diminution of the size of the liver takes place in this left lobe, in which, during fœtal life, the ramifications of the umbilical vein were spreading to such a degree, that, at the end of the first year, when the stomach has assumed its transverse position of later life, it is diminished in size by one-half. After this time the liver is steadily increasing in size and weight, but never in proportion to the increase of the body in general. Thus there is a material difference in the changes visible in the liver from those manifesting themselves in either thymus gland or heart. While the heart is keeping up with the increase of the body in equal proportion; and while the thymus will, after having grown slowly until puberty, soon afterwards commence an entirely retrograde development, ending in the total disappearance of the glandular mass, thus exhibiting an absolute diminution in

* *Klinik der Leberkrankheiten*. 1859.

size; the liver will, while increasing in absolute weight and size, not grow in relative proportion to the body.

The proportional weight of both liver and body has been found, by Frerichs, to be the following:—

In a fœtus of 5 months	1 : 20.5.
" 6 "	1 : 21.6.
" 7 "	1 : 17.
In a new-born infant	1 : 28.57 and 1 : 24.1
In an infant some days old	1 : 20.5.
In a child of 8 days	1 : 26.1.
" 5 weeks	1 : 21.66.
" 1½ years	1 : 33.2.
" 5 "	1 : 18.3.
" 11 "	1 : 25.56.
In a man of 22 "	1 : 40.3.

Thus it appears that the proportion of size and weight of the liver is very variable indeed. Variations, however, are not only seen in different individuals, but in the same individual also, without depriving the liver of its normal character. Amongst the most important causes bearing upon the variable volume of the liver, is the assimilation of the food, not only the hyperæmia of the digestive organs consequent on the act of digestion, but the copious deposition of granular and amorphous matter into the hepatic cells adding to the weight and size of the organ. This is as well proved, as, by Bidder's and Schmidt's experiments, abstinence is found to rapidly diminish the bulk of the liver. There are many factors put in action to regulate the afflux of blood to the liver. The contraction of the diaphragm and abdominal muscles lessens the circumference of the abdominal cavity, and by compressing the portal vein push the blood contained therein into the open lumina of the hepatic vessels. In a similar manner the contraction of the muscular layer of the stomach and intestines operate in removing the blood from the smallest twigs of the portals veins to the vein itself. Finally, the blood is removed from the hepatic veins to the heart and lungs, by the constant aspiration produced by inhalation and contemporaneous expulsion of the blood from the heart into the arterial vessels, the compression, by the diaphragm, of the liver and portal vein coöperating to this effect, and further, by the contraction of the thick muscular layers of the hepatic veins. These very causes of the expulsion of the blood from the liver point to a very interesting fact. The muscular layer of the hepatic veins, as mucular fibre in general, being not so well developed, and the respiratory muscles being less powerful, and the expansion of the thorax

less intense in infantile age than in adults, the blood may be expected to find its way less rapidly from the liver to the thoracic organs, and the liver in children will be more apt, than in any other age, to retain a large size. The contractility of the hepatic veins and arteries will, beside the development of the muscular layers, depend on a great number of influences, of which the degree of innervation, and disturbances of nutrition in the substance of the blood-vessels, stand foremost. Thus experiments show the liver to become hyperæmic by injuries to certain parts of the oblongated spine, electric irritation of the central end of the vagus nerve, after it has been cut, contusion of the head, poisoning by curare, cutting of the splanchnic nerves, and extirpation of the larger part of the ganglion cœliacum. How far all these influences affect children, and of what importance they will be found to be in liver complaints and other diseases of the infantile organism, remains to be seen.

From some preceding remarks, we learn the size and weight of the normal liver in both the fœtus and newly-born to be extraordinary. The knowledge of fœtal circulation equally shows the fact that the liver is the principal seat of circulation. Thus it is by no means remarkable that the liver of new-born children should be found both large and hyperæmic, before the pulmonary circulation has been fairly instituted. This physiological condition, therefore, must not be mistaken for a pathological enlargement and hyperæmia, which may be found in this early age, and may even be congenital, as the result of morbid processes undergone during fœtal life. Infants born with this anomaly, will soon waste away and die with symptoms to be noted hereafter. But the causes of hyperæmia of the liver, after birth, are very various. It will always be observed, and will remain for all life, in cases where the umbilical vein remains open and connects with the epigastric veins. Difficult delivery, deficient dilatation of the pulmonary cells, refrigeration of the skin, any impediments to circulation, may produce hyperæmia of the liver, and one of its most common causes is the premature separation of the child from the placenta, before the pulsation of the funis has closed, or respiration has fairly commenced. The hyperæmia may become such as to burst the bloodvessels; we have observed a case of hæmatemesis in a new-born child who threw up from his stomach from four to five ounces of blood in the first day after birth, and hardly escaped death, from, as we thought, no other reason but the premature tying of the funis; the infant did well after the imminent danger was removed, and lived at least a year afterwards without any inconvenience. From what we have said on the physiological and pathological hyperæmia of

the liver, a few more remarks will appear to be justified, as they are of much practical importance. It is a source of great inconvenience and even danger to the infant, to bear the least compression of the right epigastic region, and we believe it to be of the utmost importance to avoid any pressure on this part in dressing, carrying about, etc. We venture to say more; we never neglect, wherever the funis has an uncommonly great diameter, to carefully fasten it on the left side of the infantile abdomen, believing that any pressure, slight though it be, on the hyperæmic and enlarged liver of the newly-born, may be able to affect either this organ or circulation in general.

In the later periods of infantile life, hyperæmia and enlargement of the liver is brought on by the same causes as in adults; we, therefore, give a mere sketch of both the affections in other organs and the alterations of the liver, giving rise to hyperæmia. Among the former, there are to be counted all such diseases as will repel the blood destined to enter the heart and pulmonary circulation into the venæ cavæ. Stenosis of the left venous ostium, insufficiency of the bicuspid, and particularly of the tricuspid valves, and all the pulmonary affections impeding circulation within the pulmonary artery (emphysema, induration of the lungs, atelectasis, scoliosis, large pleuritic exudations) will repel the blood into, or retain it in the venæ cavæ, or stop the aspiration known to be the principal means of introducing the blood into the pulmonary circulation. In consequence of the accumulation of blood in the vena cava the hepatic veins will dilate and become hypertrophied, and the same effect will, consequently, be produced in the portal vein and all its roots. Prof. Frerichs has sometimes succeeded in finding albumen in the urine. At the same time the secretion of the liver is usually unaltered, up to a later period of the disease, when the nutrition of the hepatic cells begins to be disturbed and fatty depositions commence. Slight icterus, produced by infiltration and increased secretion of the mucous membrane of the biliary ducts, is sometimes observed even at an early period. The progress of the repulsion of the blood into the roots of the portal vein produces troubles of nutrition and function in stomach, intestines, spleen, and pancreas; the mucous membranes are of a dark red color and appear thickened, and extravasations are formed leading to either transformation into pigmentous matter or to erosions and ulcerations. At once the secretion of the stomach and intestines is sometimes increased and serous; and serum, too, is secreted from the peritoneum. This change does not take place, in an equal proportion, in all the parts where the roots of the portal vein originate, but perhaps in consequence of unequal distribution. num-

ber, size and position of the bloodvessels, the stomach suffers most, the cœcum and especially the solitary glands come next, and the small intestines are least affected by the morbid process.

Among the principal symptoms in this state of things, there will be a feeling of heaviness and pressure in the epigastric region, slight icterus and gastric catarrh, and the volume of the liver will be shown to be increased by palpation and percussion. In cases of repulsion of the blood into the portal vein, there will always be digestive troubles, nausea, swelling of the hæmorrhoidal veins, either constipation or diarrhœa. The urine is dark, and sometimes contains albumen, and always the pigmentous matter of bile. At the same time the symptoms of the original pulmonary or heart disease are found, corroborating the diagnosis, aggravating the prognosis, and endangering a cure or rendering it totally impossible.

This secondary hyperæmia and enlargement of the liver is undoubtedly not of the same frequency in children as in adults, severe and tedious diseases of the heart and lungs with their consecutive effects on the circulation in the liver being less frequent in infantile life. But it will readily be perceived of what influence in producing liver complaint, atelectasis of the lungs will be in early age, and congenital diseases of the heart, during the whole dreary life of the innocents condemned to an early death by a dangerous deformity. At all events, the liver will the more easily be troubled in the manner described, the younger the patient, the liver being most expansible in early age.

Other causes of hyperæmia of the liver, which are totally independent of repulsions of blood into the venous circulation of that organ, will be found sometimes in an atonic condition of the hepatic veins, etc., and in deficient energy of the heart; this being unable to propel the blood with satisfactory vigor into either of the two circulations. The most frequent cause, however, in children, is active congestion of the parenchyma of the liver, mostly depending on digestion. The liver is well known to increase in size during any regular and normal process of digestion, without giving rise to more than a passing and physiological afflux of blood. This physiological afflux is very apt to become pathological by the mucous membrane of the stomach being affected by irritants like alcohol, mustard, pepper, coffee, and such like, by the ingestion of a superabundance of food, or of bad food. The sensation of oppression, of uneasiness, even of severe pain is a common symptom in this condition. That the irritation of the mucous membrane of the stomach and intestines is very liable to extend to the mu-

cous membrane of the biliary ducts, etc., is just as little doubtful, as the fact that such patients as suffer from any disease of the stomach, will always complain of some degenerations in the functions of their liver, and finally material degenerations. How the irritation of the mucous membrane of the stomach is transmitted to that of the liver, does not seem to be fully agreed upon. Thus Broussais seeks for an explanation in the contiguity of the mucous membranes; Beau in a direct effect on the blood of the portal vein produced by some irritant brought into the stomach, and some consider the same result to be produced by mere sympathetic irritation transmitted from the intestines to the liver.

Traumatic influences may cause hyperæmia in the liver as well in infants as in adults. Age would not modify their effects. No less is the infantile age exposed to the effects of high temperature and miasms; more so the latter than the former. There can be no doubt that miasmatic influences give rise to severer affections of the liver than high temperature alone, as it is proved by statistical facts that degenerations of the same kind and like severity are found in the Netherlands, as between the Zones; particularly abscesses in the parenchyma of the liver, though rare occurrences in other countries of moderate temperature, are not at all rarer in Holland than in hot climates. As to the influences of miasmatic effluvia on children, we have abundant reason to state that enlargement of the liver (as well as that of the spleen) is not so unfrequent an occurrence in the infantile age as most authors would make us believe. A boy of three and a half years of age, who had passed all his life in the swamps of South Brooklyn, without ever having suffered from intermittent fever, came under our observation, with a liver extending from the third rib to the right spina ant. sup., and to the margin of the spleen. Other cases which we have had occasion to observe, impress us with the belief that considerable enlargements of the large abdominal glands will be often observed by practitioners in the fever districts of our country. Enlargement of the infantile liver is said to be connected with a great number of diseases. As to rhachitis, it is a fact that the circumference of the abdomen is increased and the region of the liver particularly prominent, but it is no less a fact that the configuration of the skeleton has a great influence in bringing on this anomaly. T. R. Smyth says he has always found rhachitis and hypertrophy of the liver in the same individual, and therefore goes as far as to identify these two abnormities. Now, it will be easily understood that hypertrophy of the liver may, in itself, exercise such an influence on digestion and assimilation as to seriously injure the nu-

trition of the organism, and therefore to produce rhachitis in a number of cases; but at the same time it must be remembered, that in early infantile age digestion mainly depends on the functions of the stomach, and less on those of the liver than in adults. Thus it does not appear to be very probable that functional troubles depending on the hypertrophied liver will be, in all cases, of such an influence as to produce rhachitis. Both of these diseases may even be considered as coördinate consequences of some other primary trouble, as, for instance, Astley Cooper is well known to have sought for the cause of rhachitis in a diseased state of the mesenteric glands. Bouvier, finally, who has as much experience on rhachitis as any man living, denies having met with hypertrophy of the liver in the majority of cases of rhachitis under his observation, thus rendering the contemporaneous existence, to say nothing of the identity of hypertrophy of the infantile liver and rhachitis, even more than dubious.

In scoliosis the liver, while being diminished in size in the majority of cases, may be enlarged. But the configuration of the osseous system is such as to render an enlargement in any other direction except upwards, downwards, or to the left, utterly impossible. For both the anterior and posterior surfaces of the liver are exposed to a constant pressure from the curved spine and ribs, to such an extent as to show deep impressions on either side and even to totally alter the shape of the organ. Such is the case particularly in those numerous cases, in which the scoliosis is to the right side, and the right lobe of the liver principally suffering in both function and substance.

Hooping-cough, too, is reported to produce enlargement of the liver in children. At least Brigg states as a fact that he found this anomaly as well as fatty degeneration of the same organ in children affected with hooping-cough. There is no doubt that such cases are readily explained by the injury done to pulmonary circulation and the repulsion of the blood into the vv. cava and hepaticæ.

The influence of malaria on the size and functions of the large abdominal glands, liver and spleen, are well known to every pathologist. Thus we need no further remarks on this subject. So great, indeed, is the power of malarious influences, that even the fœtus may be affected by the blood of the mother. Thus Hamon reports the case of a newborn infant, whose spleen was enlarged to an extraordinary extent. The mother had been suffering from malaria during her pregnancy, and was cured by the administration of quinia but after her confinement.

The results derived from post-mortem examinations of cases

of typhus in children differ very much indeed. The liver was, in the majority of cases, found to be normal, by Barrier; in many cases enlarged and either anæmic or hyperæmic, by Rilliet and Barthez; always large and hyperæmic, by Loeschner; sometimes enlarged, either anæmic or hyperæmic and softened, in newborn infants large and soft, and of a dirty brownish red color, by Bednar; and sometimes normal, sometimes enlarged, solid, and hyperæmic, by Friedleben. Friedrich observed the liver of children dying from typhus to be normal on the sixth day in one case, on the nineteenth day in one; pale and anæmic on the eighth day in two cases, on the fifteenth in one, on the eighteenth in two; in all these cases there was no complication with pulmonary disease. The liver was found to be hyperæmic on the eighth and on the twenty-first day in cases complicated with pneumonia in its second stage; and enlarged, anæmic, and fatty on the thirty-eighth day. This was a case remarkable by the presence of well developed intestinal ulcerations, which are very rare occurrences indeed in infantile typhus; at the same time the lungs were hyperæmic in their inferior lobes, and the thoracic cavity considerably compressed by meteoristic inflation of the abdomen. Whether it can be taken to illustrate our subject, remains an open question; it being not at all improbable that the fatty degeneration of the liver was of longer duration. The bile was sometimes thick, copious, and of a dark color, sometimes thin, and either yellowish or greenish. The explanation of all these differences and apparent contradictions would be impossible, but for the facts stated by Friedleben. His experience shows that the liver of children affected with typhus was enlarged in such cases only as were complicated with pneumonia. Thus we can no longer hesitate to take as granted, that the liver in uncomplicated infantile typhus is not enlarged.

Finally, laryngismus stridulus, or "crowing inspiration" of children, has been said not only to be connected with, but to depend on hypertrophy of the liver. Such, at least, is the strongly expressed opinion of an English surgeon, Hood. He is positively opposed to the opinion pronounced by Ley, that laryngismus is produced by the enlargement of bronchial glands pressing the superior laryngeal nerve and producing, by means of the recurrent nerve, reflected spasms of the glottis. He would scarcely allow some slight cases of laryngismus to be explained "by either troubles of the stomach, or dentition, or fright, or cold;" but generally, the only cause of laryngismus is found by him in hypertrophy of the liver, which is said to be produced "by mal-assimilation of the food, bad blood, and preternatural growth in this organ." And why does Mr. Hood be-

lieve "hypertrophy of the liver," which he tautologically says is produced "by a preternatural growth in this organ," to be the only cause of laryngismus stridulus? Why, because he found the liver enlarged; that is, according to him, prominent from under the ribs, in children who perished in an attack of laryngismus, and because he found nothing else, or because nothing else, at least, is stated to have been met with. Now, we know well that every continued or temporary retardation of, or impediment to pulmonary circulation may instantaneously give rise to a swelling of the liver, that even the dyspnœa of the moribund condition in common cases may suffice to increase the size of the liver by repelling the blood in its veins; thus it appears not at all astonishing that the liver should be found swelled in cases of death produced by spasm of the glottis, and further, that Mr. Hood should have mistaken the consequence of the last and fatal suffocative attack for the cause of the disease. We have every reason to expect such a mistake to be made by a writer who knows of no other means of diagnosticating hypertrophy of the liver, beside feeling it below the ribs, seeing the children gasp for breath on pressure on the liver, and lying on their back fully stretched.* This latter remark is not even true, for it will be readily observed that children affected with enlargement of the liver prefer the reverse position.

Quite a peculiar alteration, with increase of volume, is found in the liver of the newly-born affected with syphilis. It was first described by Dr. Gubler,† of Paris, and in such a satisfactory manner, that even the last writers on infantile syphilis have nothing or little to add to his expositions. In cases where the liver is thoroughly affected with syphilis, its color is yellow and differing much from its normal condition. There is no longer a difference in the two substances; the yellow color is spread through the whole mass, and with difficulty only there will be discovered some layers of whitish transparent granulations, and solitary ramifications of blood-vessels deprived of their normal contents. The liver is considerably hypertrophied, globular, turgescent. Its elasticity is such, that a cuneiform piece taken from the sharp margin and squeezed between the fingers, will escape like the stone of a cherry and rebound from the ground. When incised it produces a cracking noise like an encephaloid tumor. It is so

* See *The Successful Treatment of Scarlet Fever:* Also, *Observations on the Pathology and Treatment of Crowing Inspiration in Infants.* By T. HOOD, Surgeon. London, 1857, pp. 199.

† Gaz. d. hôp, 1848, Jan. — Gaz. méd. p. 262, 1852. — Journ. f. Kind. XIX. 171. 1852.

hard, that very thin and transparent slices may be cut from the mass. The hepatic tissue yields no blood on pressure, but an abundance of a clear slightly yellow serum, which will continue to be secreted even after the pressure has been interrupted; it coagulates like a solution of albumen. Sugar, which was so regularly found in the normal liver by Claude Bernard, was not discovered.

Injections of the hepatic structure thus degenerated demonstrate, that the bloodvessels in the indurated tissue are, in their majority, impermeable, that the large vessels are diminished in their capacity, and the capillaries entirely obliterated. Microscopical examination shows the cause of this anomaly, viz., the presence of a considerable quantity of fibro-plastic elements. Wherever the syphilitic disorganization is but partial, the cells of the hepatic parenchyma conserve all the characters of their normal condition, in the middle and in spite of these new formations. It is but natural that the deposition of a large amount of these fibro-plastic elements should be followed by increase of the volume of the liver, by compression and destruction of the original hepatic cells, by compression and obliteration of bloodvessels, and cessation of the secretion of bile. Such bile as has been found by Dr. Gubler, was of a pale yellow color and contained a great deal more mucus than real elements of bile.

This syphilitic induration of the liver may be fully developed as early as during intra-uterine life, as has been proved, from the case of a fœtus which died at the moment of birth, by Desruelles and Cazenare (Diday, traité de la syphilis des nouveau-nés, etc., 1854 p. 153). In many instances it exhibits a great similarity to the steatomatous degeneration of the liver so often found in rickety and tuberculous constitutions. The enlargement of the liver, however, consequent on this as well as the fatty degeneration of that organ, are so little in direct and immediate connection with hyperæmia and its next consequences, that we must abstain from taking further notice of them, as they do not belong to our special subject.

The diagnosis of the enlargement of the liver is not without severe difficulties, from several reasons. The amount of blood contained in the liver is very variable, as is above shown by the influences of either digestion or abstinence; thus the results of both palpation and percussion are not very reliable in some instances, and at all events the physical examination ought not to be made immediately after food has been taken. No less a difficulty is the shape of the liver, which may be affected with either congenital or acquired deformities (by means of stays, etc.). Further, the organ may be in an abnormal

location ; distension of the intestines with gas or fæces, emphysema of the lungs, empyema, pneumothorax, hydropericardium, ascites, ovarian tumors, even degenerations of the stomach, pancreas, and kidneys may give rise to dislocation. And it will be perceived at once, that in a large number of cases the exact measurement of the liver will be prevented by large degenerations in its immediate neighborhood. These points are almost of the like importance in children as in adults ; it is, however, true that degenerations of the neighboring organs are not very frequent in infantile age, but the practitioner must be aware of their occasional occurrence. It is true, moreover, that the dullness yielded by percussion cannot well give rise to mistakes in infantile age as far as the repletion of the intestines, especially the transverse colon, with hard, dry and solid fæces is concerned. Flatus may endanger the certainty of diagnosis ; fæces will not, as they generally are in a half liquid, movable condition. Now all these circumstances go to show that percussion and palpation will not be reliable in every case, and yield the exact circumference of the liver, but they show likewise, that they may seldom, if ever, be resorted to with unsatisfactory results in infantile age.

The size and shape of the thorax will influence the location of the liver. It is shorter in females than in males, and proportionately shorter in infantile, than in advanced age ; therefore the liver will be found, by palpation and percussion, reaching below the ribs in women and children, which it does not in adult males. The size of the liver, as we have learned above, is proportionately large in children, the left lobe particularly largely developed in the first year of life. It is covered, on its upper margin, by the inferior parts of the lungs ; and finally, it is pushed downwards and forwards, by contraction of the diaphragm, with each inspiration. All these circumstances will like those enumerated above require some attention and care in applying the principal means in our possession, to physically explore the size of an organ so important to the organism in both its health and disease.

Prof. Frerichs has published the longitudinal measurements of the normal liver, taken in different regions, and different ages. The measures are taken on the sternum—sternal line, from the nipple vertically downwards—mammillary line, and in a vertical direction below the axillary fossa—axillary line. They are, in centimetres, the following :

	Axill. line.	Mammill. line.	Sternal line.
Under 2 years,	4.25	3.85	2.37
2—6 "	5.08	4.83	3.72
6—10 "	7.55	6.83	3.33
10—15 "	7.12	7.06	4.44
15—20 "	8.89	8.89	5.90
20—40 "	9.36	9.05	5.82
40—60 "	9.75	9.31	6.18
60—80 "	9.00	8.00	5.41

Inspection is useful to secure the diagnosis of enlargement of the liver as well as palpation and percussion. The epigastric region appears to be filled up; the parts below the xiphoid process are rather convex than concave. The navel is generally, but not always, situated below its usual place. The abdomen is extended, and wherever there are functional troubles about the portal vein, there is dilatation of the epigastric veins, which are prominently visible all through the abdominal integuments. The same observation is made when the circulation is suffering in the vena cava, but the differential diagnosis between vena porta and vena cava is given by the condition of the cutaneous veins of the lower extremities; troubles in the cava swelling these as well as the epigastric veins.

The skin is of a dirty yellowish hue, the face appears puffy, especially round the eyes. Slight icterus is no rare occurrence. The children are restless, mostly in a pronate posture, or partly on their right side. Acute hyperæmia shows always want of appetite and indigestion, nausea and vomiting, and flatulence. The tongue is furred, yellow or yellowish green. The patients are either constipated or the evacuations are grassgreen and have a bad odor. The urine is of a dark color. There is fever, thirst, peevishness, slight icterus, swelling and often pain on the right side, dyspnœa and sometimes a short interrupted cough, and the right cheek is sometimes of a dark red color. In the newly-born the evacuations are rare, not copious, somewhat thick and tough, and of a dark green color; sometimes a yellow liquid is thrown up from the stomach; the skin has a slight yellow tint; sometimes the icteric color will spread over other parts also.

In cases of chronic hyperæmia part of the symptoms are not so characteristic. There is no fever, no pain, no dyspnœa, except some short and troublesome breathing after meals or exertion. Icterus is not so common, but the dirty-greenish, pale hue of the skin, and the almost œdematous puffiness round the eyes are seldom missed. Of particular interest, however, in children affected with chronic hyperæmia and enlargement of

the liver are the symptoms belonging to the digestive organs. It has been stated above how the roots of the portal vein are affected in cases of hyperæmia of the liver produced by repulsions of the blood into the hepatic and portal veins. The stomach, or any of the organs in which the roots of the portal vein originate, may be affected. In cases where the hepatic secretion is not interrupted nor diminished, the gastro-intestinal mucous membrane may, in consequence of capillary stagnation, simply secrete more mucus and mucous serum, and thereby effect diarrhœa. As this diarrhœa is the immediate consequence of some internal disorder which appears to become relieved by the over-secretion, as by a local derivation, it ought not to be stopped prematurely. Thus the authors of olden times, who were better clinical observers than physiologists, were not at all wrong when asserting the danger of stopping what they called a "diarrhœa biliosa." Now, a mere over-secretion of the mucous membrane from gastro-intestinal catarrh would not be so injurious, if this was all; but erosions and hemorrhages are not at all very rare occurrences. In all these cases the appetite of the little patients is not at all affected; unless the mucous membrane of the stomach is suffering from the morbid over-secretion alluded to. The younger the children, the more their digestion depends on the regular and uninterrupted functions of the stomach, as their principal food, milk, does not require many changes to become chylous. Thus it is evident that a young child with a stomach disordered in the manner described, will suffer extremely from indigestion, want of appetite and general wasting. But whenever the mucous membrane of the stomach is not injured, the children take more than an ordinary amount of food; the appetite becomes voracity. The cause is simply this, that the stomach alone has the function of nourishing the whole organism; as not only the liver in its disordered state contributes but a part of its work of digestion, but the over-secretion of the intestinal mucous membrane renders an over-taxation of the stomach and an uncommon amount of digestible food necessary. The same observation is always made in cases of ulceration of the lower part of the intestines, in marasmus consequent upon degeneration of the mesenteric glands. In both the organism requires an exceedingly large amount of food; in the former the body is constantly exhausted by the copious secretion of the ulcerations, in the latter by the non-assimilation of the food digested by the stomach and the secretion of the liver. The quality of the fæces undergoes important changes only when the secretion of bile is diminished. In such cases they have a peculiar putrid smell, as digestion is but incomplete. Of their

color in the newborn we have spoken; in younger children they are rarely characterized by the grayish-white clay-color observed in the fæces of icteric adults; but children in more advanced age show this color occasionally.

Another symptom of enlargement of the liver, exhibiting some similarity to the voracity above mentioned, has been described by Francis Battersby (*Observations on Enlargement of the Liver and Spleen, and on Pica in Children*, in *Dublin Quar. Jour.*, May, 1849). The symptoms he refers to, and which we remember to have found in one or two instances, is pica, "or an appetite for substances which are not food. It is known to affect pregnant women and chlorotic girls. Pica, in children, depends probably on an altered sensibility of the nerves, and acid state of the secretions of the stomach, owing to their being fed on depraved milk, or irregularly. As a general rule, this is one evidence of undue lactation, for of fourteen cases in which I noted it the average duration of suckling was twenty months; six of those cases were suckled two years and upwards; and one of them, weaned at one year, was continued at the breast for seven months, during the utero-gestation of a succeeding child. I have remarked that these little children eat greedily of coals, cinders, ashes, lime off the walls, dirt, shoes, paper, and even their own ordure. Children affected with pica are very delicate and wasted, their complexion is sallow, anæmic and waxy, the abdomen enlarged, the bowels are generally too free; the stools are of all colors, green, yellow, black, or white."

Repulsion of the blood into, or retention in the hepatic and portal veins is not so frequently a cause of hyperæmia and enlargement of the liver, in infantile age, as the active congestion of that organ by irritants, and bad nutrition in general. This is the general, or almost general cause of a disease which would be usually as easily avoided if sufficient care was taken, as it is insidious and obstinate when contracted. It is so frequent in children as to render the assumption probable, that it is produced as well by direct irritation of the blood of the portal vein, as by sympathetic irritation derived from the intestinal tract, and the contiguity of the mucous membranes of the intestinal canal and the biliary ducts, etc., of the liver.

Therapeutics are to be modified according to circumstances. New-born infants must be bathed regularly, dressed moderately warm and entirely loose; where the epigastric region is swelled, calomel ought to be given as a laxative. Calomel and rhubarb, with or without a light alkali is indicated, whenever the passages continue to be thick and dark green for a period of weeks. Children in more advanced age require the

same caution as to dress, pure air, digestible but little animal food ; rhubarb, aloe, with or without iron or resolvent tonics. Mercury must be positively avoided, wherever the slightest apprehension is had of cachectic disposition. In cases brought on by malaria, quinia will prove successful, but not before the hyperæmic condition is removed. Occasional emetics, and slight alkaline purgatives will do good. Scarcely any case of chronic hyperæmia and enlargement of the liver will recover and remain cured without a tonic after treatment with iron, iodide of iron, etc. Acute hyperæmia, generally produced by intestinal irritation, contraindicates any irritants, but indicates light alkalies, ipecacuanha in either small or full doses, and acids. Local bleeding is sometimes necessary in the commencement of the cure. Moderate diarrhœa must not be stopped at once. Evacuations ought to be effected by means of injections of saline solutions. Enlargement of the liver, after hyperæmia has disappeared entirely, and real hypertrophy, require iodide of iron, milk diet, and stimulant foot-baths. Cases of hyperæmia and enlargement of the liver, consequent on diseases of the thoracic viscera require the cure of these latter diseases.

ART. II.—*The Application of Photography to Medical Science, including a Direct Process to photograph the Microscopic Field.* By RANSFORD E. VAN GIESON, M.D., of New York.

THERE is, perhaps, no art that has made such rapid strides, even in this, the most progressive of all centuries, as that of photography. The most profound philosophers of this age have studied and elaborated it as a science, while thousands are daily practicing it as an art. No single branch of art of its age is so universal ; no science of modern times has more engaged the attention of philosophic investigators. The history of this truly beautiful science, though extremely interesting, would be inappropriate in a paper of this kind, the object of which is more to show the advantages of the cultivation of the art and its application to medical science, than to enlarge upon its beauties, or to pen the details of its rise and progress. The majority of medical men are so busied in their daily professional duties, that they would perhaps, deem it a waste of time to engage themselves in a study of this kind, which upon cursory examination, appears to have no immediate connection with medicine. And yet there is no science or art not strictly med

ical, the cultivation of which will more richly repay the *scientific* physician.

To the practical demonstrator, photography is invaluable. By it he can secure accurate representations of anatomical specimens, which for faithful delineation, far surpass the most trustworthy engravings. By it the pathologist can fix upon paper the most rare and curious specimens of disease. By it the surgeon will be enabled to present the exact appearance of the deformity in any given fracture, dislocation, or any external surgical lesion whatever. The advantage which would result from the establishment of photographic departments in our various charitable institutions. can scarcely be over-estimated. We are not aware, however, that anything of this kind has, as yet been attempted. If we consider for a moment the vast amount of material furnished by Bellevue and the City Hospital alone, we must admit that such a valuable adjunct to medical instruction, if properly conducted, would, in the course of time, result in great benefit to the profession at large. It is principally in our hospitals that the most abundant opportunity is offered for pathological research ; here it is that the most rare and striking cases of surgical deformity present themselves. These alone, to say nothing of skin diseases, would furnish material enough to form a valuable series of photographic plates, which would adorn the walls of the above institutions with as much propriety, and certainly with more benefit, than the portraits of our veteran surgeons, or the melancholy remembrancers of departed walkers. While endeavoring to demonstrate the practicability of some of the foregoing ideas, it occurred to us, that photography might be made subservient to medicine in still another manner. Every one who has been much in the habit of using the microscope, must occasionally have longed to fix upon paper some exquisitely perfect and rare specimens of microscopic anatomy or pathology, which now and then present themselves in the field, and regretted that no more perfect instrument was obtainable, than the camera lucida.

Again, it must be apparent to every one engaged in studies of this kind, that many of the microscopic representations, seen in books, are frequently exaggerated or faulty in detail. Indeed, with our present means, such must necessarily be the case. What we desire is the *exact* representation of the field ; this, it will be admitted, is an object impossible to be attained even by the most skillful manipulator with the camera lucida. The only manner then, by which an *exact* and *perfect* representation of the field can be secured is by means of *photography.*

Attempts have been made, both in France and England, to secure this object, but we are not aware that any *practical* method has ever been presented to the public. In a criticism upon one of the latest works on the microscope, "The Application of the Microscope to Practical Medicine," by Dr. Beale, we find the following sentence: "But the quality which more than any other, in our opinion, renders this book of great value, is the large number of wood cuts, 271, representing for the most part microscopical appearances, observed and *drawn* by the author himself." This would not seem to imply that microscopical photography has made much progress in England; else Dr. Beale would certainly have availed himself of the advantages which it possesses over the tedious manipulation with the camera lucida. Again, to be able to delineate the field by means of this instrument, even with tolerable accuracy, requires an artistic skill which can only be obtained by long practice and repeated failures. The first attempts strongly reminded us of our youthful endeavors to draw with the transparent slate; when we supposed we had finished, and removed the glass to inspect our efforts, we discovered a horse minus the head, houses with smoke issuing from invisible chimneys, trees without trunks, &c. So it is, to some extent, with the first attempts at microscopical drawing; when we suppose the field is completed, we are astonished to find here a cell without a nucleus, there a nucleus with no cell wall. That the process is both tedious and extremely trying to the eye, any one who has ever attempted it, will readily admit. Again, the present method is tiresomely slow, and undeniably inaccurate when finished. The almost irresistible inclination to *embellish* and *improve* the original draft, which few even of our most truthful observers can combat, will account to some extent for this latter fault.

In what manner, then, can we avoid these difficulties? This question admits of but one answer—combine the *camera* and the *microscope*. If we bear in mind that any object which is capable of being impressed upon the sensitive retina, can as well be cast upon the *sensitive* plate of the *photographer*, we shall encounter but little difficulty in accomplishing our object. The rays of light which emanate from a *microscopical* object, if powerful enough to produce an image upon the *retina*, can with a little ingenuity, be increased in chemical power so as to produce the same image upon a sensitized plate. The microscope, in fact, is a camera; the retina, the ground glass plate upon which the object is received, and the retentive brain the sensitive medium upon which the image is indelibly fixed. Convinced of the truthfulness of the above theories, we instituted

a series of experiments while yet at college, in order to demonstrate their practicability. Our researches were abruptly terminated by the winter course of lectures, and the preparation for the various examinations through which the humble aspirant for a medical degree must honorably pass. The proverbial abundance of time, and the absence of any very onerous professional duties in the first few months of a young physician's practice, permit us now to present the matter to the consideration of the public. Being already, to some extent, familiar with photography in all its details, one great source of difficulty was removed. Our first attempts resulted, of course, in a series of discouraging failures; but as each failure tended to simplify the process, we were stimulated to continue our experiments, until finally the object was attained. The whole instrument is now sufficiently simplified to be understood by the merest tyro in optics. The only microscope at our command was one of Chevalier's manufacture, with a power of two hundred and fifty diameters. To the main tube of this instrument a closely-fitting *slide* with a *flange*, about three-fourths of an inch in diameter, was attached. This slide and flange occupies about two-thirds of the whole length of the main tube; upon the remaining third a slide and cap is attached in order to hold the object. The whole apparatus is then, by means of the flange, adjusted to the ordinary camera-box. A diagram will illustrate this simple combination so that no one can fail to comprehend it:

Fig. 1.

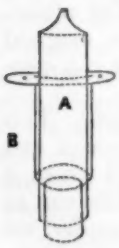


Fig. 2.

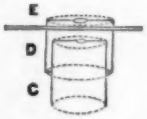
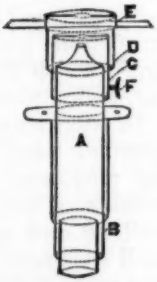


Fig. 3.



A is the main tube of the microscope; *B* represents the slide and flange by which the whole apparatus is attached to the camera-box. Upon the remaining third, containing the object glass, the slide and cap is fitted. *C*, figure 2 represents the slide over which the cap *D* is adjusted; at *E* the cap is perforated by a small slot in which the glass, containing the object to be photographed, is placed. After the object is secured by

pressing down the cap, it is adjusted to the microscope. *Figure* 3 represents the instrument when ready to be attached to the camera-box. To the slide *C* a gear wheel and ratchet *F* with a fine feed is affixed, by which the exact focus may be secured.

Fig. 4.

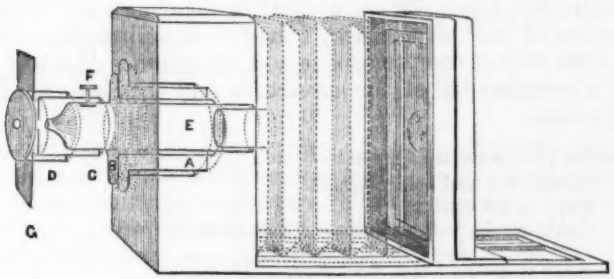


Figure 4 represents the camera box and microscope combined. The exact focus should be obtained before the apparatus is adjusted to the box ; the visual focus can then be secured by moving the ground glass plate by means of the bellows extension. In order to see the object distinctly upon the ground glass the camera must be pointed directly towards the sun, so that the central rays may strike the object. After the focus is obtained, the ground glass is removed, and the iodized or sensitive plate, upon which the image is to be fixed, substituted.

It will be perceived, that the instrument differs in no material respect from the ordinary camera, except that in one case the object is within a sixty-fourth of an inch from the lens, while in common photographing it is several feet from it. In taking an ordinary picture, the aperture in the tube containing the lenses, is sufficiently large to admit of an impression being taken by diffused light ; but with what might be called the *microscopic camera*, the opening is so small, that we are obliged to use the *direct* rays of the sun. For every increase in diameter, there will be a corresponding *decrease* in the brightness of the image upon the ground glass. In an instrument of over four hundred diameters, a condensing lens, to concentrate the rays of the sun upon the object, will frequently be found necessary. Care must be taken not to converge the rays upon the object *too much*, else the heat generated, will crack the glass containing the object, and ruin the specimen. An ordinary stand upon which to place the camera, so as to direct the object towards the sun, though not so convenient as a stout iron apparatus, with a movable joint, can, by a little contrivance, be made to answer every purpose.

Having thus given, as briefly as possible, the general outlines of the method of combining the microscope and the camera, we will now proceed to the details of the most important and difficult portion of our work, viz., that of taking what photographers call a *negative;* and inasmuch as many in whose hands this paper may fall, may be totally unacquainted with photographic manipulation, we will, in the course of the article, make use of such explanatory remarks as will render the process both easy of comprehension and execution. We will give, first, a complete list of the apparatus and chemicals needed in the process.

Apparatus for the negative process.—

Camera box and holder ¼ size.
Support for camera.
Gutta percha bath and dipper, 12 to 16 oz.
" " dishes for hyposulphite.
Glass stoppered bottle for collodion, 4-8 oz.
Common 16 oz. bottle for developer.
Photographic holder, to retain the negative in contact with the paper.
Two or three funnels.
Two pails; one with a faucet.
Hand vise to hold plate while cleaning.

Chemicals.—Nitrate of silver in crystals; Acetic acid; Iodide of potassium; Sulphate of iron; Chloride of gold; Aqua Ammoniæ; *Photographic* paper; Prepared collodion*; Filtering paper; Cotton batting; Pulverized rotten stone; Negative Varnish.

Having obtained the foregoing articles, we are prepared to commence operations. Before proceeding farther, we cannot forbear recommending that every article should have a *certain place*, and furthermore, that everything should be kept perfectly clean. Order and cleanliness, even with but a limited amount of knowledge, will often ensure success, while on the other hand, disorder and carelessness, with the best apparatus and chemicals, cannot but lead to unfavorable results; medically speaking, photography and carelessness are incompatible. One article has been intentionally omitted in the foregoing list, inasmuch as it belongs neither to the apparatus, nor to the chemicals, but is an attribute that should preponderate largely in those who wish to pursue microscopic photography, and that is *patience.*

An attempt to *hurry* any particular part of the process, will invariably be attended by mortifying failures.

The process may be divided into *thirteen parts, eight* of which pertain to the taking of the negative, and *five* to obtaining an

* We have obtained excellent results with the negative collodion of Messrs., Lewis & Holt.

impression upon paper. Those processes marked by an asterisk, must be conducted in the dark chamber.

Formation of the bath.	Fixing the image.
" " " developer.	Formation of Ammonia nitrate.
Cleaning the plate.	Salting the paper.
Iodizing " "	* Sensitizing the paper.
* Dipping " "	Printing.
Exposing " "	Fixing and Toning.
* Developing the image.	

Formation of the bath.—Take of water (distilled) 16 oz.
" nitrate of silver, 1½ oz.
To 6 ounces of the water add the whole of the nitrate.

Shake well, and add three grains of iodide of potassium, dissolved in a small portion of water; when the resulting iodide of silver is to some extent taken up, add the remaining ten ounces of water, together with eight or ten drops of acetic acid, No. 8, or just enough to give a faint acid reaction to the solution. Let the bath stand for about an hour and a half, then filter *perfectly clear*, and it is ready for use.

The object of adding iodide of potassium to the bath is to prevent the nitrate from dissolving the iodide of silver off the sensitive plate. Acetic acid is added, in order to prevent the too rapid action of light upon the plate. It also retards the action of the developer, thereby preventing what is termed "fogging," or a dusky, dim appearance of the image.

Formation of the developer.—Take of sulphate of iron (pure) 1 ounce.

Water,	16	"
Alcohol,	1	"
Acetic acid,	3	"

Dissolve the sulphate of iron in the water; add the alcohol and acetic acid, and filter perfectly clear.

Cleaning the plate.—Fasten the plate in the hand vise; pour on a mixture of pulverized rotten stone and alcohol; rub thoroughly with a piece of canton flannel; then finish with three or four strips of the same material, until the plate is perfectly clean.

Iodizing the Plate.—When the plate is perfectly clean, it is ready for the application of the collodion. In doing this, hold the plate as nearly level as possible, pouring the collodion upon the middle of the glass; when the surface is covered, elevate the plate, and let the surplus collodion drain back into the bottle from the lowermost right hand corner. When the collodion becomes somewhat glutinous, the plate must be steadily and quickly lowered into the bath. It is somewhat difficult to give any precise directions regarding the time when the plate should be dipped. As a general rule, it ought to be immersed just when the collodion ceases to stick to the finger when applied

to one of the upper corners of the plate. Should the plate be dipped too soon, the chemical decomposition between the bromides and iodides in the collodion and the nitrate in the bath, will not readily take place. Should the surface be allowed to become too dry, the coating of iodide and bromide of silver formed in the bath will be inclined to be granular, and easily washed off by subsequent manipulation. After the plate has remained in the bath from three to six minutes (during which the object can be focused), the plate may be inspected by drawing it gently up to the surface of the nitrate; if covered by a clean white coating, it may be removed; if it has a greasy appearance, it denotes that the formation of the bromo-iodide of silver is not yet complete, and should therefore be allowed to remain some time longer. When the plate is completely coated, it is placed in the holder, and carried to the camera, care being taken to keep it *perpendicular*, so as to prevent the nitrate of silver from flowing irregularly over the plate.

Time of Exposure.—This will vary according to the transparency of the object and the power used. With a power ranging from 140 to 250 diameters, from 10 to 16 seconds will be required to produce a negative of sufficient intensity to print a good photograph; with higher powers, the time of exposure must of course be proportionately longer.

Developing.—It is chiefly in this part of the process that the experimenter will meet with the most pleasure and at the same time difficulty. Pleasure, because there is something peculiarly fascinating in beholding the lifeless plate becoming in an instant, under the magic influence of the developer, as it were, replete with vitality. The surface which before exhibited not the slightest trace of an image, now reveals the object in all its details. It grows under our very gaze; we seem for the time being to be possessed of a power almost creative; nor does this peculiar fascination ever become completely exhausted; the most experienced photographer will inform you that he never approaches this part of the process without a feeling of mingled curiosity and dread. The developer, if properly used, tells us in an instant if our previous manipulation has been correctly conducted; if not, it reveals the fault and its remedy. The *difficulty* that attends this part of the process, may be overcome by a cautious *application* and a judicious *removal* of the developing fluid. The developer should be *applied* as follows:

Take the exposed plate by one corner, hold it as nearly level as possible, and *flow* it so as to cover the whole surface *evenly* and *quickly*. Any attempt to *pour* the developer upon the plate will certainly spoil the image. The next question is, at what what time must the developer be removed? This will depend

almost entirely upon the time of exposure ; *cæteris paribus*, the *longer* the exposure, the *shorter* the development ; the *shorter* the time of exposure, the *longer* the development. The chief question, however is, at what time, after the *image* has shown itself, shall the developer be removed? This again, will depend upon the *intensity* that we desire to produce. If we wish a negative that will print very slowly, the development must be carried as far as possible ; if, on the contrary, we wish a negative that will print *rapidly*, we must of course cut short the development as *soon* as possible. It will readily be seen by the chemist, that developing is neither more nor less than a reduction of metallic silver upon the parts that have been exposed to light. Of course where the light has been most intense, just there will the chemical decomposition be most energetic ; it necessarily follows that the greater the deposition, the more will the light of the sun be obstructed in printing from the finished negative upon paper. The term intensity, as used in photography, has reference to the *thickness* of the silver coat. When the sun's rays are much obstructed by this latter, the negative is said to be of great *intensity*. The best negatives are secured when there has been a *medium* exposure and development. If the exposure has been properly timed, the developer should be removed when the outlines of the whole image are strongly marked ; still, the experimenter unaccustomed to photographic details will be liable to make several failures before he will be enabled to judiciously combine the exposure and development. If, after a negative is finished, we find it to be too intense to print well, it would be advisable in the next trial, to diminish both the time of exposure and development. Should the picture assume the appearance of an ordinary *positive* (where the image is backed with black varnish, and viewed by *reflected* light) both the exposure and development should be prolonged. A few experiments conducted in this manner will ensure final success. When the operator has reason to believe that the development has reached its maximum, he should place the plate under the pail containing pure water, turn on the stop-cock, and let the water flow gently over the image, until all traces of sulphate of iron have been removed. The picture is then ready for what the photographers term "*fixing*," or in other words, dissolving off the undecomposed bromo-iodide of silver. This, of course, can be done by dipping the plate into a solution of any salt, which is capable of holding in solution a bromo-iodide. Of these there are many. For photographic purposes, however, a solution of the hyposulphite of soda is preferable, in as much as it acts more slowly and evenly than the cyanide of potassium, which is used for positive pictures.

Fixing Solution.—Hyposulphite of soda, two ounces; water, sixteen ounces.

The negative is left in the fixing solution until the image is seen clearly by transmitted light; if left in too long, the picture will become gradually darkened. The solution, however, works so slowly, that nothing but culpable negligence will spoil a negative which has been properly developed. When the whole of the undecomposed bromo-iodide of silver has been dissolved off, the plate is placed under the cleansing pail, and all traces of hyposulphite of soda washed away. There is but little danger of destroying the image by washing *too long;* on the other hand, if the plate is not thoroughly cleansed, some hyposulphite of soda will remain, which will, in the course of time, slowly but surely cause the picture to fade. When the plate has been cleansed, and cautiously dried, over an alcoholic flame, it is ready for the negative varnish, which prevents the image from being defaced by subsequent printing. The varnish is applied in the same manner as the collodion, care being taken that no particles of dust or dirt are included, each one of which, by obstructing the sun's rays, will form a white speck upon the paper positive.

The operator being now supplied with a good negative, is prepared to transfer the image to paper. The *printing* process may be conveniently divided into five parts, viz.:

Formation of
1. Ammonio-nitrate of silver.
2. Salting the paper.
3. Sensitizing "
4. Printing.
5. { Fixing, / Toning.

Formation of the Ammonio-nitrate of silver.—Take of crystallized nitrate of silver, 100 grains; water, 2 ounces, dissolve the nitrate in the water; pour off one half ounce of the solution; to this add very cautiously drop by drop, liquor ammoniæ until the oxide, which is first formed is just dissolved. When this takes place, add the remaining ounce and a half of the silver solution, and filter perfectly clear. Inasmuch as the ammonio-nitrate is very sensitive to light, it should be kept in a bottle of black glass so as to prevent decomposition. It is important that care should be exercised in adding the ammonia, for if an undue proportion is present in the solution, the chloride of silver subsequently formed will be dissolved, and the sensitiveness of the paper greatly impaired.

Salting the paper.—The paper is salted by means of some soluble chloride, usually either chloride of ammonium or sodium; chloride of ammonium, is generally preferred.

Salting solution.—

Chloride of Ammonium	24 grains.
Water	12 ounces.
Loaf sugar	6 grains.

When the ingredients are perfectly dissolved, immerse the paper in the solution; after the surface is thoroughly covered, it may be removed, and pinned up to dry. When dry, it is prepared for the application of the ammonia nitrate of silver, which is laid on by means of a fine camel's hair brush, or what is better, a bit of cotton batting tied upon the end of a stick. Care should be taken to draw the brush evenly over the paper, going over it both lengthwise and crosswise, so that the whole surface may be covered. When the slips of paper have become dry, they are ready for printing.

The slips of paper should, if possible, be senitized in the evening by artificial light; this saves the trouble of operating in the dark room. Only a few slips should be made sensitive at one time, inasmuch as they are liable in the course of twelve or fifteen hours, to become of a yellow hue, the result of partial decomposition.

Printing.—Place the paper, sensitive side upwards, upon some soft medium like canton flannel; upon the paper apply the negative, *collodion-side* downwards; fasten the whole to a level piece of board, by means of spring clothes pins, and expose it to the direct rays of the sun. When the paper which projects from beneath the plate has turned to a deep bluish black, the picture (provided the negative is of the proper intensity) is ready for "*fixing* and *toning*." This latter process is absolutely necessary. The paper must be *fixed*, in order to prevent the portions unacted upon by the light from eventually becoming as dark as the image, and "toned," that the picture may assume a fresh, lively appearance.

Both the toning and fixing are usually accomplished in the same bath, which consists of hyposulphite of soda, in excess, to dissolve the undecomposed oxide, nitrate, and chloride of silver. A small quantity of chloride of gold is added, from which a thin film of metal is deposited upon the image, giving what photographers call the "tone." We have not been able to make the toning bath prepared from the ordinary formula, produce as good results as the following:

Chloride of gold	6 grains.
Nitrate of silver	25 "
Hyposulphite of soda	2 ounces.
Water	6 "

Dissolve the hyposulphite of soda in three ounces of water, the chloride of gold in two ounces, and the nitrate of silver in

the remaining ounce; to the solution of hyposulphite of soda, add very cautiously, little by little, the chloride of gold, stirring constantly while mixing; then add in the same cautious manner the nitrate of silver; let the whole stand for a few hours, and the bath is ready for use. It is highly important that the *order* of mixing the solutions here given, should be strictly observed. If the *hyposulphite of soda* is poured into the chloride of gold solution, a precipitation of *metallic gold* will ensue, a result by no means desirable. If the order of mixture is rigidly followed, a double hyposulphite of soda and gold is formed, from which salt, the film of metal, is deposited upon the image. The toning bath differs in this from the rest of the chemicals employed in photgraphy, that it *improves* with *age*. The experimenter should not therefore be discouraged, if his first attempts in toning and fixing are not successful; after a few prints have been immersed, a decided improvement will gradually manifest itself.

The *time* that a print must remain in the bath, will depend to a certain degree upon the fancy of the operator. It is advisable, however, to remove it, when a light bluish-black tint shows itself, or nearly the color the print possessed, when first immersed; this will require from one hour and a half to four hours, depending upon the original tint of the print and the temperature. Up to a certain point, the longer a print remains in the bath, the blacker does it become; it should not, however, be allowed to remain *too long* with the hope of increasing the black, where the printing has been improperly conducted. A mistake made in *printing*, cannot be rectified in *toning*. By remembering this, much trouble and many failures may be avoided. After the print has been removed from the bath, it should be washed for a few moments under a running stream, and allowed to remain in pure water until all traces of hyposulphite are completely removed. This will require from three to five hours. By tasting of one corner of the print from time to time, we can ascertain with sufficient accuracy, if the washing is complete. The paper, when first taken from the bath, possesses an intensely sweet taste. When this saccharine taste becomes imperceptible, the print is considered sufficiently cleansed. The picture is then placed between two folds of bibulous paper, to remove superfluous moisture, pinned up in the sun, and allowed to dry. It is then ready for mounting, as the experimenter sees fit. It is not presumed that the operator will obtain a perfect representation of the field in his first trials; for the reason that a certain amount of preliminary *practice* is needed, even with the most explicit and voluminous directions. Each failure, however, reveals to the intelligent experimenter its *cause*, and how it can be in future avoided. It should be

remembered by the beginner, that the great causes of failure are :

Over-exposure = *fogging.*
Over-developing = " "
Under-exposure = *want of intensity.*
Under-development = " " "
Dirt in the bath = streaks.
Dirt in the collodion } = opaque and transparent spots.
Dirt in the developer }

By the foregoing process, which is the result of our own experience in this somewhat novel department of photography, we have been enabled to arrive at a degree of success far beyond our most sanguine expectations ; we therefore offer it to the profession, brief and necessarily incomplete as it is, with confidence, feeling assured, that if the directions and suggestions here given are followed, success will ultimately reward their efforts. It was not our intention, nor have we endeavored to enlarge upon the photographic details inseparately connected with the process. Only such directions are given, as were deemed *absolutely* necessary. Our aim in so doing, was, if possible, to save the experimenter the labor of wading through some one of the thousand works published upon this subject. For those who are unacquainted with the *chemical* laws connected with the action of light upon the salts of silver, we would recommend Hardwich's *Photographic Chemistry*, a book not valuable because of its formulas, but eminently fitted to give both theoretical and practical information upon this intricate subject. I am indebted to my associate, Dr. Charles F. J. Lehlbach, for the following comparative remarks upon the process of M. Donné, which are somewhat interesting in this connection :

M. Donné, in his work on microscopic anatomy* refers to his apparatus—" microscope photo-electrique "—and mentions that a number of the plates of the splendid atlas accompanying the book, were obtained from daguerreotypes taken by its means. It must not, however, be supposed that these plates were *directly* obtained by a combination of the microscope and the camera. They were copied from the daguerreotype, and thus liable to the exaggeration and faults of the engraver not only, but also of the copyist. But however this may be, the reader can best satisfy himself as to the insufficiency of Donné's and Foucault's apparatus, by referring to Pouillet's " *Elements de Physique experimentale et de la Meterologie,*" 5th edition. Vol. II. ; Paris, 1847, p. 422, where a description and plates of the apparatus are given.

* *Cours de Microscopie Complémentaire des Études Médicales*, etc., with Atlas.

In Donné and Foucault's photo-electric microscope, the light of charcoal, rendered strongly incandescent, by means of a Bunsen electric battery of sixty plates, is thrown upon a reflecting mirror, whence it passes through a screen, consisting of an oblong glass box, containing a solution of alum, in order to absorb the caloric; thence the light is thrown upon the object to be examined, which is placed in the focus of a series of lenses, representing an ordinary solar microscope, behind which another screen is placed, upon which the picture is caught and fixed.

M. Donné's method, then, is not one by photography, as this term is *now* understood (printing and multiplying pictures from a collodion negative) but simply photography by the primitive and long known process. By Donné's process, the image of the microscopical field cannot be fixed directly upon wood or stone, ready for the engraver, but has to be copied; its advantage, hence, consists chiefly, in giving the draftsman a permanent picture of the field, while it does not dispense with his services altogether. Besides this, Donné's apparatus is so *complex, difficult of manipulation*, and *expensive*, that, as experience has amply shown, it can never be of general practical value to the scientific public.

ART. III.—*A Historical and Critical Examination of the Operation of Tracheotomy in Croup, with a Report of Fourteen Cases.* By A. L. Voss, M.D., Surgeon to the Canal Street (German) Dispensary, N. Y.

History of Tracheotomy in Croup.—The history of tracheotomy as a last resort in the treatment of croup, is as short as it is interesting. That the affection now termed croup was early recognized, many passages in the works of ancient (Hippocrates not excluded) as well as mediæval authors show; and as tracheotomy (then called laryngotomy) from the time of Asclepiades (the contemporary and friend of Cicero) has been recommended and resorted to as a last remedy to avert death by suffocation in the different forms of angina, it is possible, nay, to judge from the writings of M. A. Severinus, it is even probable, that the operation has been performed also in the last stage of croup. These cases may not have been separated from other affections, having more or less similar and dangerous symptoms, but were classed under the general term of cynanche, suffocative angina, or like names.

During the prevalence of epidemics in nearly all parts of Europe and of North America, in the first half of the last century,

at a time when researches in pathological anatomy began to be so numerous and fruitful, the true nature of croup was revealed. Francis Home, if not the first, at least one of the first and best writers on this disease, recommended tracheotomy as an *ultimum refugium* in this fearfully mortal affection in 1765. This recommendation, although repeated by many and eminent authors, as Crawford, 1777, Michaelis, 1778, Chaussier, 1800, Schwilgue, 1802, and others, was not put in practice before 1782, when John Andree, a surgeon in London, is said to have operated successfully. This case, not published by the operator himself, is recorded by Borsieri, Professor of Clinical Medicine, in Pavia,* who gained the knowledge of the fact from a letter of his pupil, Locatelli, then in London, who was an eye-witness of the operation; but another account of the same operation left by White† does not agree with that of Borsieri, and Valentin, physician-in-chief of the French troops and hospitals in Virginia during the revolutionary war (*Recherches historiques et pratiques sur le croup*, Paris, 1812, page 629), ascertained by direct inquiries, that this operation, so often referred to, was not made for croup, but for extraction of a foreign body in the air passages.

Dr. Michaelis, in a very interesting letter from New York, dated 1780 (he was surgeon-in-chief of the Hessian soldiers in New York, afterwards Professor of Clinical Medicine at the University of Marburg), and published in 1782, in the 6th volume of *Richter's Chirurg. Biblioth.*, page 120, describing the the results of a post-mortem examination, made the day day *after* the burial, of the body of a negro boy 14 years of age, dead of croup, concludes with the following remarks: "This "observation, it occurs to me, affords a proof of the probable "utility of tracheotomy. As such cases, where the inflammatory "swelling may produce suffocation, are frequently met with, "and cannot well be discerned from those in which the danger "arises only from the pseudo-membrane, as tracheotomy in the "former cases is unquestionably necessary, in the latter it "would doubtless be of great advantage by opening the way "for the expulsion of the pseudo-membrane, it is unpardona- "ble if it is not resorted to in time." The same opinion on this subject may be found in his work, *De angina polyposa s.*

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* *Institut. Med. Pract.*, Vol. III. Mediolan, 1785, 4to.

† Dr. Farre, in a note to a paper read before the London Medical and Chirurgical Society, Dec. 22, 1812 (*Transct.* Vol. 3, page 335), cites this case from Dr. Thomas White's inaugural dissertation, published at Leyden, in 1786, in his (Dr. W.'s) own words, and adds the particulars of the operation, which are insufficient in White's dissertation, and which he (Dr. F.) obtained through the kindness of Astley Cooper, from Mr. Andree himself.

membranacea, Göttingen, 1778; but in 1809 the same author had changed his opinion entirely respecting the operation.

The operation was performed twice unsuccessfully, about 1790, by Duntze, of Bremen. Dr. Elisha Dick, of Alexandria, Va., tried the operation in 1800, on a girl 9 years old; while he was cutting the skin, the child breathed its last. The operation, generally resorted to *in extremis*, and with the same fatal result in each case, was performed by a surgeon, not named, in 1795, in Barcelona, in Spain; in 1802 by Duret, surgeon of the navy in Brest; in 1802, by Maunoir, in Geneva (girl, 2 years 10 months old; great hemorrhage, requiring at least 10 ligatures; immediate relief, but death 3 days afterwards); in 1803, by the son of Dr. John Warren, of Boston, Mass. (child 16 months old); in 1806 by Guérin, in Bordeaux (boy 16 months old); about this time, by Callisen, in Kopenhagen, twice; in 1809, by M. A. Petit, in Lyons; in 1809, by Caron, and in 1810, by Guitton, both of Paris. The first successful case of tracheotomy in croup, which I have been able to find authentically related, is that by Thom. Chevalier, in *Med. Chirurg. Transact.*, Vol. vi., London, 1815, page 150. The subject of this operation (27 April, 1814) was a boy seven years of age; no tube was used, the trachea being opened by a crucial incision.

The first Napoleon, in 1807 (his nephew, the then only son of Queen Hortense and his presumptive heir, the elder brother of the present Emperor of the French, having fallen a victim to the then prevailing disease in Paris), offered a prize of 12,000 francs for the best treatise on croup, a *concours* open to the members of the profession of every country. Jurine, of Geneva, and Albers, of Bremen, divided the prize. Each of these authors condemned tracheotomy in croup, and their proscription, endorsed as it was by the high authority of the twelve judges, certainly did not encourage the partisans of the operation. Before the prize was awarded, however, F. Caron, surgeon to the Hospital Cochin, in Paris, had published his "*Traité du Croup aigu*," 1808, a remarkable work, and at the time of its publication and still later (*Bricheteau Précis analytique du Croup*, Paris, 1826, page 414 et seq.) unjustly ridiculed, and not admitted to the *concours* on account of the non-fulfillment of some formalities. The character of this work is best shown by its motto, from M. A. Severinus, "*incisio tracheæ arteriæ, commentum divinum*," and by its concluding words, borrowed from Casserius, the celebrated pupil of the still more celebrated Fabrice of Aquapendente, both great advocates of the operation of tracheotomy. The sentence taken from Casserius is, "*pro inhumanis, inexpertis, formidolosis,*

crudelibusque, imo tamquam pro homicidis habendi," meaning those who neglect to perform tracheotomy. Does this not remind one of Trousseau's recent words: "ne pas faire la trachéotomie c'est un act coupable"? Caron's motto was at that time "hors la trachéotomie point de salut pour les croupalisés." I fear that Caron, by his too passionate and overzealous defense of tracheotomy in croup, created more opponents than friends. He even went so far as to offer a prize of 1000 francs for a memoir on croup, containing an unobjectionable refutation of the admissibility of the operation, or proving its value by the report of successful cases. Caron himself seems to have had, besides the above mentioned case in 1809, another one later, terminating fatally too.

The verdict of the judges of the famous *concours* so unfavorable to the operation, the want of a single instance of success (now so easily understood, if we consider the manner of operating, and the period of the disease when it was done) however could not deter single and eminent physicians, as Rosen, J. P. Frank, Boyer, either from recommending or performing tracheotomy in extreme cases of croup. Porter, in Dublin, also operated in 1821, and Hewson in 1824.

At length Bretonneau, of Tours, having several times operated without success, in 1825 succeeded in saving the daughter Count Puységur (a name famous in the history of medicine, as far as it relates to mesmerism and animal magnetism). Encouraged by this first happy result, and aided by his pupils and followers Trousseau, Velpeau, Guersant, and others, Bretonneau by his classical researches improved the method, the instruments, and after-treatment of the patient, to such a degree, that the Academy of Medicine in Paris in its recent discussion on the "Tubage," declared: "la trachéotomie dans l'état actuel de la science est le seul moyen à employer lorsqu'il ne reste plus d'autres chances de salut dans l'emploi des moyens médicaux." (*Bullet. de l'Acad. de Méd.* Tome xxiv., page 420.) Scoutetten, of Metz, operated in 1830 upon his own daughter, six weeks old, with success; I must not omit to mention that this remarkable operation on Scoutetten's child loses its merit so far, as it is doubtful if the child was affected with real croup, or rather laryngitis stridula; from that date to 1844, he operated six times, not once saving his patient. Trousseau made his first successful operation in 1831, and Guersant operated twice on the same child, and saved it.*

* Three other cases of a second operation on the same individual, of which two were successful, are related by Millard (*de la trachéotomie.* Paris 1858, page 24).

As the reports of successful operations in France multiplied, the operation gradually found advocates in other countries; first in Germany, where it is now generally if not exercised, at least admitted, its former opponents being silent.

The reception of the operation in England, where it was first proposed, where the first successful case is reported and where the valuable double trachea-tube originated, has been somewhat more reluctant; the most eminent authorities rejected it, or admitted it only as an exception, believing that in the vast majority of instances, it would tend to bring surgery into disgrace. This opinion is in a great measure due to the want of success in the operations as attempted by single operators some years ago. Now the causes of the unfavorable issue of tracheotomy in England are apparent, if we compare the reports of the cases with the rules of treatment so masterly pointed out by Trousseau. Before the operation was resorted to, the patient had generally been treated with antiphlogistics or at least weakening remedies, and then the operation was resorted to at the last moment; the manner of operating and the kind of after-treatment were equally defective. But with the improvement in the methods of treatment, successful cases multiply, and opinion begins to change. I would refer to Fergusson as the highest and most eminent surgical authority, whose change of opinion in this respect is obvious, if we compare the chapters on this subject in the last two (third and fourth) editions of his *Practical Surgery.* As further evidence of the change of opinion among English surgeons, I may also refer to the report of the results of tracheotomy, instituted in fourteen cases of true croup occurring in the different hospitals of London, just published in the *Medical Times and Gazette*, Oct. 15th, 1859, page 379, and to the very good paper "on Tracheotomy in Croup," read by Conway Evans, on the 28th of June, before the Medical and Chirurgical Society in London, and published in *Medical Times and Gazette*, Aug. 27, 1859.

I fear that the opinion of eminent authors, adverse to the operation of tracheotomy in croup, has contributed much to the fact that the operation is not more often resorted to in New York. If we may judge from the scarcity of reports on this operation in the periodicals of this country, the general opinion is adverse to it. Dr. Gross, in his recent work on surgery, is decidedly against the operation; the eminence of this author, his known familiarity with foreign medical literature, will lead many to the same view, and as a consequence, the operation, capable of saving many a life in suitable cases, will not be performed. Dr. Gross quotes the fact that an excellent Parisian surgeon—Monod—did not have a single successful case in forty

operations; this, certainly, is not encouraging. and nothing but the strongest conviction of the utility of the operation could have led to such unremitting perseverance. But his singular and happily exceptionally ill results, were not shared by other operators. I will mention a few statistics:—Guersant operated twenty-three times, before he could boast of a successful operation; but since then Guersant has saved in his private practice in eighty-two operations seventeen patients. Trousseau, in his private practice from 1850 to 1855, had twenty-two successful among forty-two operations. Of one hundred and thirty-one tracheotomies made by eight physicians (not surgeons), forty-nine were successful; of three hundred and eighty-eight operations made by twenty-two Parisian surgeons, (Bretonneau, Trousseau, Gerdy, Guersant not amongst them—but including the more unsuccessful operators as Monod, Thierry, and Malgaigne) forty-two were successful; Gerdy saved four in six operations; Archambault saved seven in twelve; Roser, in Marburg, saved nine in seventeen; Passavant, Frankfort, o. M., saved five in nine; Fock, in Magdebourg, saved ten in twenty-four; physicians in New York,* my own cases included, have saved sixteen in fifty-four cases. Of four hundred and forty-four operations performed in the Hôpital des Enfans trouvés, from 1850 to July 1858 one hundred operations were successful. These statistics would seem to establish, that in general, from one-third to one-fourth of the operations will be successful. That this proportion will vary in single instances, I admit, but from the improvement that has steadily taken place in the results of this operation everywhere, where it has been resorted to, if we compare the results of the earlier operations with those of more recent date, it is to be hoped that this improvement will continue, and procure for this operation the universal reception to which by its merits as a direct life-saving mean it is entitled.

With all other diseases of epidemic nature, croup shares the protean character in a more or less prominent degree as to climate, locality, season, complication, malignity, etc.; and to this variety in the manifestation of the disease, the many and conflicting opinions of the authors owe their origin and their justification. It is obvious, that this diversity of opinion as to the nature of the disease, has engendered the different opinions as to the merit of tracheotomy in croup, its true intent (to admit air, or to extract false membranes, and apply local remedies), the time when it should be performed, and the circumstances which would forbid it. As soon as by the researches of pathological anatomy, the true nature of the affection was revealed, the suggestion of the operation arose at once, and

* Drs. Gescheidt, Krackowizer, Noeggerath, Schnetter, Schwedler.

that its execution did not have the expected success, must be attributed rather to the deficiency of the mode of operating, and to the improper time (it being done only *in extremis*) than to the falsity of the theory which led to its trial.

Propriety of the Operation.—The question of the admissibility and the merit of tracheotomy in the last stage of croup, after the failure of all other therapeutical means, depends, first, on the nature of the pathological alteration in the affected organ, and, second, on the possibility of removing those alterations or their consequences, by the proposed operation.

Now the anatomical alteration pathognomonic of croup, is the pseudo-membrane, lining and blocking up a more or less considerable portion of the air passages, sometimes as a mere local affection—pure croup; sometimes coëxisting with these peculiar symptoms of a general participation of the system, designated as diphtheria. As a complication of the croupous process, we find frequently in the lungs hepatization, emphysema, and bronchitis. I omit intentionally the "nervous element" in croup, either the spasmodic of many old writers, or paralytic of some recent authors (*Niemeyer*).

The principal functional disorder arising from the first mentioned anatomical alterations, is insufficient respiration, asphyxia; and as a remedy for this danger alone, the artificial opening of the upper part of the trachea is proposed, in order to give free access of air to the lungs. If these are sound, the operation will save the patient from suffocation; if the lungs are diseased, art has done what was possible in a case of closure of the larynx; the patient once free from the danger of asphyxia, has to be treated for his pneumonia, or bronchitis, etc., now complicated with a simple wound of the trachea, which was necessary to give him even the possibility of a successful treatment of his affected lung.

I will not speak of the danger of the operation as an additional complication to the already affected organ, as this is very differently judged by different authors. Tracheotomy stands in this respect on a level with other life-saving operations, as herniotomy, trepanation, cæsarian section, etc., and the same reasons sustaining such operations, will be applicable with regard to tracheotomy.

In every case of croup, therefore, where suffocation is imminent, and all other means have failed to relieve the patient, tracheotomy as the only chance of saving the life, should be resorted to. That this proposition is unobjectionable in all cases of pure laryngeal croup, is, I think, evident. In August, 1851, I saw a stout boy, four years old, who, without any premonitory symptoms of sickness, suddenly in the night awakened

his relatives by his labored and noisy breathing; he had every symptom of marked laryngeal croup; the usual means had not the slightest effect in arresting the affection. On the following day suffocation being imminent, I proposed tracheotomy, but the physician called for consultation declaring that he would not operate, if the child was his own; the child was left to its fate, and died about thirty-eight hours after I had seen him for the first time. The autopsy showed the pseudo-membrane limited to the larynx alone; lungs perfectly healthy, with the exception of an interlobular emphysema at its lower anterior lobes, and a little frothy mucus in the bronchi.

As to the result of the operation in complicated cases, the opinions even of its decided partisans differ very much. Leaving the results of observation in practice aside for the present, it is logical to conclude, that as general diphtheritic intoxication or bronchitis, or bronchial croup, or pneumonia, are not affections absolutely fatal, like stenosis of the larynx, in case the latter affection should be complicated with one of the former, the removal of the stenosis even by an operation would not only be justified but required. Hereafter I will show that this theoretical reasoning is fully borne out by experience, although it is obvious that the happy termination of the operation in complicated cases, is by far less frequent than in cases without any complication.

As another inducement for operation in complicated cases, I would mention the immediate relief, the opening of the trachea affords to the little sufferer. Whoever has seen the horrible struggles of a child dying in croup, and the instantaneous change of the sad scene by the operation, even if this relief be only temporary, will with reluctance abstain from the use of the knife in a similar case, even if he should be convinced beforehand that it would only bring relief from the terrible struggles of suffocation, and contribute to euthanasy.

An exceptional, and as it appears very rare indication for tracheotomy in croup might be the occurrence of emphysema, by rupture of the trachea during a fit of violent coughing. A case of this kind, where the rupture had its seat between the first and second tracheal cartilage of a child 2½ years old, is reported by Latour (*Manuel sur le Croup*, Orleans 1808, p. 62); an incision was made in the pericranium, tracheotomy not permitted, and the child died six hours after the rupture had occurred. Dr. Gescheidt has done the favor to communicate to me a similar case, occurring in his practice a few years ago; by promptly opening the trachea he arrested the alarming and rapid progress of the spreading emphysema, and had the good fortune to save his little patient, a girl of 4 years.

Let us now consider to what extent the above opinion, to perform tracheotomy without discrimination, in every case of croup, where the laryngeal stenosis, not yielding to therapeutical means, endangers life by imminent suffocation, is restricted by the experience gathered from the excellent and numerous reports of the different European authors, and my own limited observation.

The younger the child is, the less likely a happy termination of the case after operation may be presumed. In a "Lettre des Internes à l'Hôpital des Enfants à Mons. Bouvier" (*Monit. des Hôpit.*, Nov. 25, 1858), it is recommended not to operate on children under 2 years of age, and on those from 2 to 2½ only with repugnance. The reports of cases of successful tracheotomy in children under 2 years are scarce, it is true, but Trousseau (*Journ. des Connoiss. Med. Chir.*, Sept. 1834), saved a child of 13 months, still nursing, by the operation. Hereafter I shall have occasion to mention another child, not quite so young, but still under two years, and more remarkable in another respect. Scoutetten's famous case shows, at least, that a child of 6 weeks may be tracheotomized with success, if such an unusual event should ever present itself again.

Of very great influence on the success of the operation, is the bearing which the medical treatment, before the case presents itself for tracheotomy, has had on the vital forces of the child; if it is weakened by bloodletting, calomel, blisters, emetics, (principally antimonial)—a method of treatment by the best authors now generally condemned—the operation is less promising than if such treatment had not been employed.

The complication of croup with general diphtheria is, by most authors, considered as excluding the operation, but of exceptions even to this rule, Barthez gives an instance—he operated on a boy of 3 years, presenting this suspected complication against his own conviction, merely at the instance of two of his colleagues at the Hôpital St. Eugénie, and the operation ultimately saved the child (*Allg. Wien. Med. Zeitung*, No. 23, 1859, p. 172).

The cases of secondary croup, as they are called, occurring during or immediately after scarlatina or measles, were considered by Trousseau as absolutely contra-indicating the operation. I am not conversant with a successful case of tracheotomy in scarlatinous croup, but, considering the case, No. 5, of my own observations, in which the child lived 31 days after the operation, the tracheal wound being quite closed, I should hold myself justified in repeating the operation, if a case of the same kind should present itself again to my treatment. Of croup, subsequent to measles, successfully operated upon, Millard, in an

excellent *thèse* (*De la Trachéotomie dans le Cas de Croup*, Paris, 1858, p. 23), cites three cases. According to the same author, the complication of hooping-cough, or chronic bronchitis, with croup, would be rather encouraging to, than forbidding the operation.

Of more frequent occurrence, and, therefore, of more importance, are the complications of laryngeal croup with pneumonia, acute bronchitis and bronchial croup; all such cases were considered formerly, by Guersant, as absolutely unfit for operation. But now the records of single successfully operated cases, refuting the generality of his opinion, at least in regard to bronchial croup and pneumonia on one side, are not wanting, so that now only bilateral pneumonia would forbid the operation. Another circumstance, still enhancing the importance of these complications of croup with affections of the lungs, is their difficult diagnosis in such cases. Auscultation, in a case of confirmed croup, is utterly useless; the loud and harsh sound produced in the trachea and larynx, by its obstruction, make the more delicate respiratory murmurs in the lungs, receiving only an insufficient quantity of air, perfectly inaudible, and if, therefore, the stethoscope is of no value, percussion is treacherous, as proved by many observations, by which parts of the lungs before the operation had to be, and were considered hepatized, which were found immediately after the operation perfectly permeable (*Chassaignac, Leçons sur la Trachéotomie.* Paris: 1855, p. 40, and *Millard l. c.* p. 44). The respiratory motion of the thorax and abdomen, and the celerity of the respiration are the only signs of value in the appreciation of these complications. As to the action of the respiratory muscles, I was of opinion, before I had made the observation of case No. 12, that the very marked retraction of the scrobiculus cordis, lower part of the whole thorax and the jugular fossa accompanying each inspiration, indicated the lungs free from pneumonia or bronchitis; this case, however, convinced me of the erroneousness of my opinion, as far at least as it relates to bronchitis. In regard to the number of respirations, I am led from my own observations, to state that the more frequent and short the respiration is, the less chance is there for a happy termination of the case by operation. The quality and frequency of the pulse I consider of very doubtful value in relation to the prognosis of the operation.

As children tracheotomized for croup require a very careful and unusually frequent and assiduous attendance, the possibility of such care should not be overlooked in calculating the chances before the operation. Cases No. 9 and 14 of my observations are lessons which I shall never forget.

In regard to the time when the operation should be performed, "doctors differ;" some postpone the operation as much as possible, and make it only *in extremis*, but have less favorable results than those who operate earlier. My rule has been to propose the operation, when, by the obstruction in the larynx, respiration has been rendered insufficient, as shown by the commencing asphyxia, provided this state is not relieved by an emetic. The respiration is then hissing, harsh, loud, and labored; a long inspiration is immediately followed by a shorter expiration, both are not separated by an interval of rest; the patient is pale, covered with clammy sweat, drowsy, sometimes cyanotic, more agitated, haggard and restless. I saw a lad of 14 years fully dressed walking his room up and down in the greatest possible anxiety a few minutes before he died of tracheal croup, extending over the bronchi of the right side. If, however, from whatever cause the performance of the operation has been delayed till the patient is *in extremis*, under otherwise favorable circumstances, especially if the case is one of pure laryngeal croup, without complications, a favorable issue can be hoped for, and the operation should not be left untried.

The anæsthesia of the skin, partial or general, as a consequence of acute cyanosis, by Bouchut considered as an indication to hasten the operation, is by no means constant. I am inclined to consider it rather an exceptional symptom, and, therefore worthless in regard to the question of the time of the operation.

Can Chloroform be used during the operation?—The operation being resolved upon, the question arises, can we use chloroform, and is there any benefit, without danger, in its use. Tracheotomy is generally a short operation and not very painful, and the respiration already impaired to such a degree, that the inhalation of anæsthetics seems dangerous. I have not, therefore, employed chloroform until recently, and was encouraged by the record of cases in which it was used with benefit by others. I regret not being able to recall to my memory the name of the surgeon who first used it in these cases. If, from the few cases of my own, it is proper to draw a conclusion, I may say that, having seen no ill results whatever from its use, the operation is facilitated in a great degree; the recovery from the influence of the anæsthetic, in these cases, seemed to me more than commonly protracted, but in no manner alarming. I shall, therefore, use it further if not contra-indicated.

Method of operating.—Much has been said about the difficulty of this operation; it is rather a resolute coolness and presence of mind that is required in its performance, than a peculiar dexterity. Of assistants, three are necessary, one to hold

the child's head, a second to hold its feet, and a third, who should be familiar with the operation, to attend to many requirements, as in nearly every operation we need a third hand. I place the child, undressed and wrapped tightly to the shoulders in a sheet with his arms alongside the body, and his feet directed to the window, on a narrow table, the upper part of the body slightly elevated, under the neck a firm roll, so that, by holding its head firmly backwards, the anterior part of the neck is free and straight. The operating surgeon, standing on the right side of the child, ascertains the position of the cricoid cartilage, and from it exactly in the mesial line, makes an incision to the fascia colli of about 1½ inches to the jugular fossa; sometimes a vein is running in this direction, the incision then is to be made on either of its margins; the fascia being carefully divided, the surgeon should now feel for arteries to avoid them. In a case operated on by my friend and colleague, Dr. Krackowizer, at this point a convolution of tortuous and large veins protruded so much, that they required two ligatures. I never used a ligature in my operations; a spring forceps left on the bleeding vessel till after the operation proving sufficient. The surgeon should now penetrate more carefully, dividing layer by layer, to the trachea, always guided by the finger if not by the eye; the trachea, exposed to the length of the required incision, should be fixed by the insertion of an artery hook (its handle directed to the patient's face) immediately below the cricoid cartilage; holding the hook so with the left hand and fixing the trachea by it, with a pointed knife from a little under the insertion of the hook, the trachea is opened downwards and a dilator immediately inserted in the middle of the wound and held open, so that the tube can be inserted; this done, the hook may be loosened and the tube fastened by a tape tied round the child's neck. This, I think, is the safest and easiest method of performing the operation.

Various instruments invented.—Others have proposed many ingenious instruments, especially adapted for this operation. Garin's instrument (delineated in Fergusson's *Practical Surgery*, and modified by Bardeleben) combines the knife and dilator and hook; H. Thompson's trocar-like instrument (delineated in *Erichsen's Science and Art of Surgery*, 2d edit., London, p. 763), recommended by Pitha, combining the knife and dilator; Ulrich's, resembling the double-bladed knife used for microscopical purposes, serves also as knife and dilator (*Zeitschr. der Gesellsch. d. Wien. Aerzte*, 1856, No. 48); Langenbeck's double hook combines hook and dilator; Marc See's, and many others too numerous to be mentioned, I pass over. Having never used one of these in-

struments, I cannot judge of their merit. Maslieurat-Lagémard (*Jour. de Connoiss. Méd. Chirurg.*, 1853, No. 6), finding himself suddenly under the necessity of performing tracheotomy, unprovided with the proper instruments, made use of pins bent like fish-hooks and having a thread at their head attached, to keep the tracheal incision dilated ; Des Chènais, for the same purpose constructed an apparatus out of hair pins (*Ibid.*, No. 8). Chassaignac's proposition to insert at once a hook, with a groove on its convex side, through the skin and intermediate parts in the trachea, and to make from the groove of the hook, with one stroke the division of skin and windpipe, is too hazardous to merit being practised. Roser (*Archiv. f. physiolog. Heilk.*, 1859, Heft 1, p. 120), having divided all the parts, covering the trachea, seizes the latter with a hook forceps himself on one side, his assistant on the other, and divides the trachea between the two instruments. Or, in case a reliable assistant should not be at hand, he inserts by means of a crooked needle a noose on each side of the intended incision in the trachea, in order to have by the nooses each edge of the tracheal wound under control.

Opening the trachea.—The general rule to delay opening the trachea till bleeding has ceased, must frequently be disregarded, especially if the bleeding is parenchymatous and baffles all means to arrest it, for by the impaired and insufficient respiration the venous system of the body is overloaded. In this case, the opening of the trachea should not be delayed, as the free respiration will immediately check the bleeding, so troublesome to the operator and so dangerous to the child; for if much prolonged, it will either soon produce syncope, or by depletion reduce the forces of the patient to such a degree, that the operation will only be of temporary benefit, the child dying afterwards exhausted. To open in such a case the trachea, the child's head should be held in an erect or forward position, to guard as much as possible against the blood penetrating into the trachea. Pitha (*Vierteljahrschr. f. d. pract. Heilk.*, 1857, *Vol. I., page* 52) attaches little importance to this accident, an opinion I cannot share. When, however, this accident has happened to me, I have repeatedly followed the example of Roux, Ricord, Baum and others and sucked the wound, at the same time keeping up, if necessary, artificial respiration, by insufflation and compression of the thorax.

Hæmorrhage during the operation.—In regard to hæmorrhage during the operation, the cases present a great variety, as sometimes nine and ten ligatures were required. I have never used a ligature ; tying of veins, by some condemned, cannot well be dispensed with in some cases ; Roser ties "*en masse.*"

That the surgeon should be on his guard, on account of anomalies in the course of blood-vessels, a case of Brault (*Gaz. d. Hôpit.*, 1855, No. 114) shows, where the arteria Neubaueri rendered the operation very difficult. To avoid the danger of hæmorrhage, doubtless, caused Dr. Clerc to propose the opening of the trachea by means of caustics (*Revue Méd. Chir. de Malgaigne*, 1851, Tome ix., p. 237).

Tracheal Tube.—The best tube to be used, all agree now, is the double one of Dr. Borgellat; the first idea of it is due to Dr. Martin, and may be found in a letter inserted in the *Philosoph. Transact.* for 1736 on an operation for sudden and violent symptoms from acute disease about the glottis. The size of the tube, varying according to age of the patient, should be as large as the calibre of the trachea will permit. Many practitioners use a tube with an extra opening of the diameter of the tube's calibre on the convexity of its posterior wall, either only of the outer tube or of both outer and inner. The purpose of this opening is to allow without removal of the tube, to ascertain the permeability of the glottis and so fix the time when the use of the tube may be discontinued. I have always used tubes without this contrivance; from a paper of Dr. Fock, of Magdebourg (*Deutsche Klinik.*, 1859, No. 23 and seq.), I see the report of a case ending fatally, the cause being a portion of the thyroid gland protruding into the dorsal opening of the tube, was lacerated in the act of removing the inner tube; blood coming from this source, coagulating and blocking the tube, suffocated the child, before proper help could be procured.

Insertion of the Tube.—The insertion of the tube is sometimes very embarrassing, principally if the tracheal wound is very deep and if the operation has to be performed with artificial light; if the tracheal incision in the depth of the wound is clearly visible and properly dilated, the placing of the tube cannot well present any difficulties. Some introduce the tube over a director or an elastic bougie used as a guide, others make no use of the dilator, or in its stead insert only a blunt hook in the upper corner of the tracheal wound, and sliding the extremity of the tube under the edge of the tracheal wound, first on one side, by a kind of turning make it slip also under the opposite edge and into the trachea. For fastening the tube, a small ribbon or tape is preferable to elastic strings.

Treatment of the Wound.—To dress the wound, I used in all cases pure glycerine, brushed every three or four hours on the wound and on the internal and external surface of the tube; in two cases only, I applied for a few days nitrate of silver to the wound, it having assumed a sloughy ash-colored surface. Others, guided by Trousseau, cauterize the wound in all cases with-

out discrimination, and insist on protecting the wound from contact with the silver tube by interposing lint and oil silk. From the omission of this, in my observation, I have seen no unfavorable consequences, and therefore shall not change my practice. After the removal of the tube, the use of a poultice or a simple water dressing, in all my cases proved sufficient for soon closing the wound.

After-Treatment.—On the after-treatment in general, too much care cannot be bestowed. The surgeon or a reliable assistant should constantly be within call of the nurse during the first days; to the neglect of this rule, I have to attribute the death of the boys, observation No. 9 and 14. Tracheotomy badly performed, but well treated afterward, will end favorably in a third of all cases, whereas a tracheotomy excellently executed, but badly treated afterward, will invariably be followed by a fatal termination; these are Trousseau's words (*Gaz. des Hôp.*, August 19, 1858). The inner tube should, according to the nature and abundance of the secretions, be taken out more or less often, and cleaned. To swab the trachea, to introduce a forceps to take the pseudo-membranes out, and cauterize the trachea and bronchi with probangs, formerly a common practice, is now justly condemned. Barthez lately proposed to instill from time to time a few drops of a solution of chlorate of soda or potassa into the tracheal wound, with the view to help the detachment and solution of the pseudo-membranes.

If at any time after the operation, the respiration should again become labored and evidently insufficient, without the cause of it being in the tube or in the affection of the lungs, a probe or feather should be introduced into the trachea, to ascertain if a plug of coagulated mucus, just below the tube in the trachea might not be the cause of the mischief. This happened in the case No. 9, of my observations, and as Roser mentions this fact too, its occurrence cannot be a very unusual one.

To give the air to be respired through the tube as much as possible that moisture and temperature, the air attains by its normal passage through the mouth and nose and their sinuses, I make use of a piece of loose, coarse sponge, impregnated with tepid water and enveloped in a piece of gauze, and so applied over the wound; Trousseau recommends a comforter of loosely knitted wool for this purpose. Temperature and humidity of the air in the room of the patient ought to be regulated accordingly. Children, after the operation, sometimes suffer from difficult deglutition; a phenomenon explained differently as to its cause by various writers; sometimes the children will take fluids without any trouble, and solids only with pain and cough;

sometimes the reverse takes place. If they should refuse food altogether, as mentioned by Trousseau, forcible nourishment should immediately be directed. In the few cases of my own, this untoward event I have not met with. An instance of sudden death after operation by convulsions, my eighth observation presents; another occurred in Mayo's practice four days after the operation, when there was every prospect of recovery (*Druitt, Surg. Vade-mecum*, Lond. 1851, page 443—note); a third case of this kind is related by Dr. Weber, in Darmstadt (*Zeitschr. f. rationelle Medizin*, 1852, Bd. III., page 13), death occurring suddenly by convulsions on the forty-sixth day after operation, the child having still the tube in use.

Of secondary hæmorrhage, Dr. Fock relates an instance in which on the third day after operation, arterial bleeding was brought on in the removal of the tube; by seizing the bleeding point with an artery forceps and leaving the closed instrument on the vessel, no further trouble marred the recovery.

Another not very uncommon sequel of tracheotomy, is the ulceration of the trachea, caused by the contact of the lower end of the tube, either with the anterior or posterior (seldom) wall of the trachea—this accident is mentioned and justly appreciated already by Lenoir in his *Thèse de Concours* (*de la bronchotomie*, Paris, 1841, page 46). Roger, in a paper read before the Academy of Medicine in Paris (April 5th, 1859) dwells on this subject rather largely, and proposes instead of the tube now in use, several modifications—elastic, or articulated, or mobile tubes. If this accident has really the importance Roger claims for it, a tube fastened to its external plate in the moveable manner in which ships' lamps or compasses are fitted, would perhaps be worth a trial.

Removal of the tube.—The tube should be dispensed with as early as possible; but before the tube is definitely removed, it should be well ascertained if it can be done with safety. Trousseau in one case left the tube forty-four days in the trachea; a child in the Hospital for sick children in Paris, used the tube for seven months, another five years, and still lives with an air-fistula. Among the cases reported by Dr. Fock, a child only one and three-quarter year old, used the tube for one hundred and twenty-six days, and yet recovered ultimately; in the other of Dr. F.'s cases, the tube had to be worn from ten to twenty-three days; in my cases from six to fourteen. The usual time to remove the tube, is about the seventh or eighth day; in rare cases the tube could be dispensed with on the fourth day; quite an exception in regard to the removal of the tube is the 3rd case of my observations. In ascertaining if the tube can be left out of the wound, the greatest care should be taken,

and a trustworthy assistant should always be near, as it is often very difficult to replace the tube alone, if the child, not able to understand and appreciate the doctor's doings, gets excited and restive, and the relatives as usual prove very bad assistants. Some children will do very well without a tube, if they are perfectly quiet and composed or asleep; whereas the respiration at once gets labored and insufficient, if the child is crying or otherwise excited.

There are a few cases on record, where the use of the tube had to be continued indefinitely either on account of perfect atresia, or stenosis of the glottis or larynx, in consequence of the cicatrices of ulcerations. Dr. Weber's case (l. c.) was of this sort. In another case (Guersant, *Union Médicale*, No. 138, 1854), the use of the tube had to be continued over the usual time; when removed and the wound held closed, the air would pass, not sufficient for regular respiration, with a harsh, hissing sound through the glottis; the surgeon was led to try if, by passing with a properly curved probe a thread with a plug of lint attached to its end from the wound through the glottis upwards and out of the mouth, he could not clear the passage; this manœuvre succeeded perfectly, a large piece of still adhering membrane, had formed the impediment, and was detached from its seat by the lint-plug.

All other affections of the lungs or other organs occurring in tracheotomized children, ought to be treated according to general principles.

I will now proceed to detail my own cases in the order in which they were presented to my observation, arranging them at the end of this article in a tabular form, to facilitate their review in regard to sex, age, and results of the operation.

Case 1.—V., a stout boy, aged 4 years 2 months, in the middle of January, 1853, presented the symptoms of a slight catarrh, when his brother 2½ years of age, showed the same affection in a higher degree. When I saw the boys on the 23d, the existence of laryngeal croup in both was evident; fauces red and swollen; no exudation; lungs free from inflammatory affections; the younger boy more feverish than the elder; prescribed for both an emetic of sulphas cupri, warm baths, and a solution of carbonas potass.; the following day no change; emetic repeated; brought up some shreds of false membranes in the younger boy with no relief; on the following day in the younger boy beginning asphyxia, a very laborious respiration led me to propose tracheotomy, which was rejected by the parents; in the evening the boy was in agony, and died during the night. The elder boy's symptoms increasing steadily, the proposed tracheotomy was accepted and performed late in the

night of the 25th; the venous hemorrhage occurring after the incision of the fascia, I tried in vain to stop; this, and the want of proper light, prevented my seeing the parts I was about to divide; feeling for the cricoid cartilage, I inserted below it a hook into the trachea, and opened it; failing to introduce the double canula, I finally inserted the single one, but to my horror the boy had ceased to breathe. I instantly sucked the wound, and by insufflation and alternate pressure on the thorax, kept up artificial respiration, and succeeded after a time in restoring the lad, who breathing easy, soon fell into a sound sleep. His lungs I ascertained now to be perfectly free; resp. 36; pulse 120; twelve hours after operation changed the single for a double tube. During the fit of coughing produced by the insertion of the new tube, a great mass of mucus and shreds of false membrane were ejected. Ordered aq. laurocerasi; eighteen hours after operation, pulse 95; respiration 38; thirty-six hours after operation, pulse 100; respiration 36; skin moist; cough moderate and loose; wound looks pale; seventy-two hours after operation, pulse 85–90; respiration 30; wound suppurates well; no medication; eight days after operation removed the tube, which brought on coughing and vomiting, but the respiration was unimpaired; on the ninth day the voice began to return; on the tenth day, immediately after dinner, severe cough and vomiting; voice still weak; air passes through the wound only when the boy coughs; on the eighteenth day after operation, the tenth after removal of the tube, the wound is closed.

The post-mortem examination of the younger boy showed false membrane over the whole interior of the larynx, filling the ventriculi Morgagni totally, and extending down the trachea to the larger bronchi, adhering tightly above the middle of the trachea, being loose below; lower part of left lung hepatized, in the minor bronchial ramifications liquid frothy mucus; interlobular emphysema in a slight degree.

Case 2.—J. B., boy, 4 years of age, three days ago attacked with croup; given up by the attending physician; saw him in the night of 26th June, 1857; the parents demanding the operation, encouraged by the recovery of the subject of my first observation in their neighborhood. The boy being in imminent danger of suffocation, the respiration irregular, very labored from 20 to 26; cyanosis very marked; pulse small and trembling; I performed tracheotomy immediately, not even waiting for assistance; below the isthmus of the thyroid gland I divided a large vein crossing the trachea; the blood pouring out of it jetwise in great quantity, I seized the bleeding end with a spring-forceps, which I left closed on the vessel, intending to tie after the opening of the trachea; the incision in the wind-pipe made,

I introduced at once the double tube; when I removed the forceps from the vessel after the operation, bleeding did not return, and a ligature was not required. The boy soon slept, having ejected great quantities of mucus and fragments of false membrane; his respiration then was 34; pulse 126; lungs free; twelve hours after operation by the accumulation of dried mucus in the tube, the opening of the tube being very narrow, the respiration labored, the boy very agitated; the clearing of the tube instantly restored quiet; no medication; the second day after operation, the boy could hardly be kept in bed; removed the tube on the morning of the fifth day after operation; reintroduced it in the evening, the boy's respiration being not so free as I wished; removed it again on the following morning. The wound was healed on the 21st day after the operation; the 15th, after the removal of the tube.

Case 3.—S. B., a girl of three years (sister of the patient No. 2), at the same time when her brother had been a few days without the tube (7th July) presented the symptoms of a simple catarrh, for which I ordered her to take a mixture of spirit. Minderer. and vin. antimon., and a tepid bath. On the following day, the croupous nature of the affection was evident. I ordered an emetic, and cold water applications round her neck; the following day, symptoms worse; yellowish white spots on the tonsils were touched with lunar caustic; an emetic repeated; no false membranes, however, were ejected, and no relief obtained. On the contrary, the disease progressing steadily to imminent asphyxia, pulse being 180–200; respiration 30 to 34, and very laborious. I performed tracheotomy, with the kind assistance of my friend and colleague, Dr. Schwedler; failing to introduce the double tube, I succeeded with a single; after a very protracted fit of coughing, by which masses of mucus and portions of false membranes were expelled, the child seemed easy, and slept for several hours, not coughing at all; the pulse being 120, and respiration 26 to 28, and the lungs free. On the following day, I introduced the double tube in place of the single; the child's state continued satisfactory, so that I ventured on the fifth day after operation to remove the tube; some hours after this, the child being asleep, I saw the wound closed by an air bubble, not moved by the even and regular respiration; this satisfied me that the tube could safely be dispensed with. On the 7th day after operation, the child's voice returned; the pus and mucus secretion filling and closing the wound, air only escaped through it during coughing; but the aspect of the wound was somewhat pale, and covered with a film of a whitish exudation. On the 8th day after operation there was more cough,

in the evening hoarseness, and the pulse (the days before never over 95–100) 120, and respiration (before never exceeding 36) now 50; no affection of the lungs revealed by percussion or auscultation. On the ninth day after operation, the fourth after removal of the tube, these symptoms increased so rapidly, that suffocation was imminent; the wound so far closed, that during inspiration no air penetrated through it, but during expiration air escaped through the wound, indicating a stenosis in the larynx (that there were no exuberant granulations protruding from the inner aperture of the incision into the trachea, and causing this mischief, I concluded from having been able to turn a properly bent probe, introduced in the tracheal incision, freely around, without meeting an impediment). I thereupon introduced a director, and with a blunt pointed knife enlarged the incision, and reintroduced the tube with immediate relief; on the following day, the tenth after operation, loose cough, and free expectoration; following day, eleventh after operation, cough more annoying, and more agitation; in the evening, expectoration of a large cast of false membrane, and all alarming symptoms disappeared; on the fourteenth day after operation, five days after the second introduction of the tube, it was again removed; on the twenty-second day after operation, the wound was closed.

Case 4.—H. B., boy two years and ten months old, a patient of Dr. Ch. Kammerer, had, in March, 1858, scarlatina, of which disease enlarged tonsils, swollen cervical lymphatic glands, a copious discharge of purulent mucus from the nose, excoriations around the eye-lids, principally at their angles, on the lips and the alæ nasi, are the remaining affections. The first sign of the affection progressing to the larynx, occurred on the 28th April; a hoarse cough, with rapid and harsh respiration; an emetic and two leeches ordered by the doctor caused the patient a marked but only temporary relief; the affection, notwithstanding repeated emetics and cauterization with nitras argenti, and the proper internal remedies, progressed steadily till suffocation threatened to terminate life. I saw the child with Dr. K. early on the first of May. It appeared very pale and delicate; complete aphonia; respiration labored, hard and hissing; the jugular fossa, the lower part of thorax, and intercostal spaces very much retracted during each inspiration; lungs not hepatized; respiration 34; pulse could not be counted. Agreeing with Dr. K., that in tracheotomy was the only chance for the boy's recovery, the operation was immediately performed; venous hemorrhage very profuse and annoying, and could only after the introduction of the tube be arrested with ice-water and compression; a small artery cross-

ing the trachea below the thyroid gland from the left side, I sized with a spring forceps, removing it only after the operation, when the little artery did not bleed any more ; no shreds of false membranes were ejected by the cough after the insertion of the tube, but the respiration was easy, and the boy having recovered from the shock of the operation, and having taken with great appetite some food and drinks, had a sleep of several hours, slight coughing not disturbing it ; respiration 36 ; pulse 140 ; skin warm and moist ; lungs everywhere free ; the cough became more troublesome in the evening, when several casts and shreds of false membranes were ejected ; the boy passed a comfortable night ; this favorable state continued to the fourth day after the operation, when the wound showed a whitish surface, with gray spots ; the dose of solution of chlorate of potassa, ordered immediately after the operation, was increased, and the wound cauterized with nitrate of silver, a more tonic diet and sulphas quinin., improved the aspect of the wound ; on the sixth day, an attempt to remove the tube showed that the larynx was not yet free, and the tube had to be replaced, till on the ninth day its use could be discontinued. As encouraging as the state of the local affection proved, the wound healing kindly, and the respiration being quite normal, so unfavorable was the general condition of the child, tonic diet, quinine, chalybeates, fresh air, all combined, failed to restore him, and death occurred on the first of June, thirty-one days after the operation, the wound in the trachea being so far closed, as to admit only a very fine probe.

Autopsy.—The lungs were healthy, with the exception of howing traces of interlobular emphysema at their lower lobes ; he blood in the larger vessels and the cavities of the heart had the appearance of blackberry syrup ; in place of fibrinous coagula, it contained streaks of a clear transparent albumen-like substance. Head and abdomen not examined.

Case 5.—M. B., a stout girl, four years of age, was taken with croup in the latter part of August, 1858, the affection progressing steadily, notwithstanding the usual treatment having been put in force from the beginning. The attending physician, Dr. Ward, of Williamsburgh, had given up the hope of saving the child. With Dr. W., early in the morning of the 26th of August, I saw the patient, presenting every symptom of the last stage of laryngeal stenosis. As far as the examination of the lungs was practicable, nothing unfavorable was detected. Tracheotomy, therefore, was at once performed, to the immediate relief of the child. It was an unusual time before the cyanotic color of the lips had changed to the normal redness ; the child having recovered from the immediate depressing

shock of the operation, pulse beat 140; resp. 28; a slight catarrhal affection was all that a close examination of the lungs revealed; in the evening, pulse 125, resp. 30; skin moist; had slept for several hours; face looked now perfectly normal; slight but moist cough; respiratory murmur in both lungs satisfactory; no false membranes expelled; the secretion expelled from the trachea a little more viscid than in the morning; ordered, a solution of chlorat. potass. 27th. Same state; secretion from trachea more liquid. 28th. Resp. 40; pulse 120; shreds of false membrane expelled. 29th. Wound very red, swollen and painful; ordered to be dressed with aq. Goulard. 31st. The 5th day after operation, tried to remove the tube, but the respiration soon became laborious, more rapid and noisy, showing the glottis still insufficient for the normal quantity of air; replaced the tube. Sept. 3rd. The tube was taken out in the morning, but had to be reinserted in the evening, which was accomplished with very great difficulty, the child being restive and struggling hard; besides this, the artificial light proved utterly insufficient to bring the depth of the wound into a clear view. Sept. 5th. Another attempt to remove the tube showed the glottis still blocked up. Sept. 9th. Final removal of the tube, fourteen days after the operation. Sept. 20th. The wound closed, eleven days after the removal of the tube, and twenty-five days after the operation.

Case 6.—N. L., a rather delicate child of 2 years, 4 months, was attacked with laryngeal croup in the beginning of September, 1858. I saw her for the first time on the afternoon of Sept. 5th. Resp. 22, very laborious, hissing; jugular fossa and xiphoid process very much retracted by inspiration; complete aphonia; no dull sound over the chest by percussion; signs by auscultation negative; pulse about 200, and irregular; the child's face was livid; it lay quietly in a state of collapse bordering on coma; tracheotomy was performed immediately, Dr. Rosswog doing me the favor to assist. Failing in introducing the double tube, I inserted a single; the relief afforded by the artificial opening of the air passage was instantaneous after a copious mucus expectoration, with shreds of false membranes mixed; auscultation of the lungs revealed bronchitis in the upper part of the right lung, but everywhere else healthy respiratory murmur. Resp. soon after the operation, 30; pulse, 125; expectoration continued copious; ordered chlorat. of potass. Sept. 6th. The same state; changed single tube for the double. Sept. 8th. Bronchitis in the right lung subsiding; left lung free. Sept. 10th. Attempted to remove tube, but failed. Sept. 13th. Tube removed, six days after operation;

in the evening, respiration normal, if the child is not under excitement; voice still hoarse and cough decidedly croupy; if the child drinks, the fluid escapes partly through the tracheal wound, and creates cough, not so with solid food; no fever. 17th. Fluids partly pass still during deglutition through the wound, although it is so far closed that air only during the act of expiration escapes by it. Sept. 22. Wound nearly closed. Oct. 5th. Wound closed, 22 days after removal of the tube, 30 days after the operation.

Case 7.—M. H., a very fat and short necked boy, 2 years and 2 months old, sick with croup for two days. Dr. Schilling found him on the afternoon of the 4th of January, 1859, in the last stage of croup, and suffocation so imminent that tracheotomy seemed to him the only measure that might be tried with a chance of success. With the kind assistance of my friend and colleague, Dr. Krackowizer, I performed the operation as usual. The artificial light, and the shortness and fatness of the neck of the child, rendered the proceeding exceedingly difficult and embarrassing. The thymus gland, apparently of an abnormal size, protruded from below like a valve over the wound, and had to be kept from interfering with the operation by means of a noose. Having opened the trachea, and with much difficulty inserted the tube, respiration was not free. On introducing a curved probe through the tube, and pressing the trachea as much as possible back, the respiration was rendered easier. Auscultation showed normal respiratory sounds in the whole left lung; in the right, bronchitis of the two upper thirds, and pneumonia of the lower third was evident. The child died two hours after the operation, being not even relieved by it. Post-mortem examination not permitted. Introducing my little finger into the tracheal wound to the bifurcation, I could not detect anything that might help in the explanation of the many doubtful points this case presents.

Having met with an observation in a paper *on anomalies of the thymus gland*, by Dr. Clar, professor of clin. medicine in Graz (*Jahrb. d. Kinderheilk.*, Wien, 1859, heft 3, page 109), resembling the case just stated very much, and having the important results of the post-mortem examination, I present a short extract of Dr. C.'s observation: A stout and very fat boy of one and three-fourths years, was taken at noon of January, 25th, 1854, with cough and slight fever; the symptoms increased in gravity during the evening, the cough and voice getting hoarse, the respiration loud, resembling the noise of sawing; an emetic, an antiphlogistic purgative, and a poultice had been employed before the physician's visit at nine o'clock, who

then diagnosticated croup. The boy being still lively and little feverish, a sinapism on the upper part of chest, four leeches, poultice, emetic, purgative and a mustard poultice to the feet were prescribed to be used during the night; symptoms steadily aggravating, so that the child at four o'clock in the morning was in agony, very pale, inspiration and expiration very labored and evidently insufficient. Tracheotomy was performed at five o'clock, but the surrounding soft parts protruding with every inspiration into the tracheal wound, the hemorrhage increasing from the struggles of the child, and the suffocation becoming more and more imminent, the tube, only incompletely introduced, had to be removed, and death occurred at seven and a half o'clock. The results of the necroscopy instituted on the following morning, were: Œdema of cerebral meninges and lungs, posterior surface of epiglottis injected, covered with purulent and macerated croupous exudation, mucous membrane of larynx and trachea injected, covered by the like exudation and swollen, principally around the ligaments of the glottis, so that the glottis was nearly closed; the thymus gland large, very pale, showing clearly two lobes of a soft and elastic tissue, compressed as it looked between sternum, pericardium trachea and the two bronchi, protruding over the upper margin of the sternum on both sides of the trachea till over the thyroid gland, exceeding in weight one ounce (the normal weight ranging from two to four drachms, and being at this age often only a rudiment). Dr. C. inclines to assume as cause of death the compression of the trachea by a sudden intumescence of the thymus gland, so that this case would come under the "mystic thema" of the asthma thymicum.

Case 8.—A slender and rather pale boy of five years, after having had for two days a "cough," was seen by Dr. Krehbiel, who recognized laryngeal croup, and ordered the usual remedies with no benefit whatever, the disease increasing steadily. I saw the child on the 27th of May, 1859, in an alarming state of dyspnœa with very marked cyanosis. Respiration very laborious, about twenty, pulse small and irregular. During the necessary preparations for the operation, the child was sinking very rapidly, so that it was quite insensible when laid on the table for the operation. I had to make the incision a little to the left from the mesial line, in order to avoid a large vein running in that direction downward; there was hardly any bleeding during the incisions, but before I had opened the trachea, all respiration had ceased; hastening the remainder of the operation, I commenced artificial respiration with success, but only after a long and painful suspense; a great quantity of mucus mixed with shreds of false membranes expelled

by an accession of cough, freeing the respiration very much, yet still half an hour after operation, the boy showed a great inclination to fainting, the respiration becoming superficial, slow, the face becoming pale and collapsed again; by administering to him some stimulating drinks, this state subsided slowly; on the swollen tonsils, flakes of white exudation; the boy soon slept soundly, not interrupted by cough for four hours in succession; during the sleep the pulse was 100, the respiration 22; lungs free; cough loose and easy, not distressing; the boy passed a good night. In the morning I found the boy sitting up in bed taking his bread and coffee; his pulse 120 respiration 30; skin dry and warm; one hour later the boy was taken suddenly with violent convulsions of face and extremities, and died during the access, the respiration always being undisturbed. I satisfied myself soon after, that the tube, cleaned by myself one hour before his death, was in perfect permeability; my little finger introduced through the wound to the bifurcation of the windpipe encountered nothing as far as it could reach. Necroscopy not permitted.

Case 9.—N. N., stout boy five years of age, for three days affected with laryngeal croup, treated with emetics, chlorate of potass. and local cauterization was on the 27th of June, 1859, in the stage of asphyxia of the disease; by percussion of the chest a dull sound was nowhere produced; auscultation reveals nothing; respiration 24, labored, with very deep retraction of spaces between the ribs and above and below the sternum; pulse small, irregular, above 180; tracheotomy was performed, presenting nothing unusual; large patches of false membranes were ejected, and soon after the operation the pulse was 150, the respiration 32; the lungs both free. June 28th, respiration 44; pulse 128; skin moist; nothing could be detected indicating an inflammatory affection of the respiratory organs; the boy took drinks, but refused solid food; a solution of chlorat. of potass. was ordered. 29th, respiration 40; pulse 120; slight bronchitic affection of the right side; secretion abundant and liquid. 30th, the same bronchitic affection hardly to be recognized; shreds of false membrane evacuated. July 1st, four days after operation, death suddenly by suffocation, before attendance reached the sufferer.

Autopsy.—The tube was unobstructed, but immediately before its end a plug formed of pieces of false membrane and the viscid secretion of the bronchi completely filled the trachea; in the lungs, with the exception of interlobular emphysema in both, and bronchitic affection in the right, nothing worth remarking was found; the larynx still lined with croupy exudations, partly adhering, partly loose and floating; on the anterior wall

of the trachea, an inch below the incision, just on the point to which the tube had reached, a small ulceration of the mucous membrane, and by it a denudation of a part of a tracheal cartilage was found. The edges of the ulceration were irregular, not swelled or red.

Case 10.—T. B., a slender girl of four years and three months, was taken with slight cough and hoarseness on the 9th of August, 1859; I saw her on the following day; found her without fever; lungs free; respiration 27; pulse 90; her tonsils slightly red and tumefied with no traces of exudations or ulcerations, the cough decidedly croupy; the voice changing from hoarseness to clearness, and *vice versa;* sometimes a complete aphonia existed; the sputa consisted of a rather clear mucus streaked with blood and containing small parcels of pseudo-membrane; vomiting having occurred several times spontaneously, I ordered only a solution of chlorate of potassa. 10th, bronchitis of the upper right lobe; respiration 30; pulse 120; refused every medicine with rare obstinacy and acuteness against coaxing and ruses, so that everything had to be forced into her—her struggles and excitement on account of such repeated proceedings were such, that I had some doubt if the benefit intended by the medicines would not be more than compensated by the mental and bodily excitation in administering them. 11th, nearly the same state in general; pulse 120; but respiration 24 and decidedly more labored; aphonia permanent; tonsils free from exudation. 12th, medicines had to be discontinued, as their administration by force always produced, besides the acceptable vomiting, fits of suffocation not a little alarming; respiration now 20; pulse 160 and irregular; respiration more and more labored; cyanosis beginning rapidly to increase; auscultation now useless; by percussion no dullness perceptible; in the afternoon, tracheotomy became the only chance and was performed; my friend and colleague, Dr. Jacobi, doing me the favor to administer chloroform, and by his kind and valuable assistance and that of Dr. Kudlich, of Hoboken, the operation was very much facilitated. After the incision of skin, cellular tissue and fascia, I missed the mesial line, as I could not detect the interstice between the muscles of each side, separated the muscular fibres with a probe, no hemorrhage occurred as no vessel was met with; the operation was rapidly finished; when the influence of the anæsthetic began to subside, the respiration became weak, superficial, irregular, intermittent, threatening to fail altogether, so that artificial respiration was resorted to, and it seemed to me to require a far longer time to restore respiration to a normal state, than in any of my former cases. No false membranes were ex-

pelled ; the child having recovered from the shock of the operation, the respiration was 28 ; pulse 100 to 110, small, irregular, later in the evening it rose to 130 ; the respiration to 46 ; by percussion nothing abnormal was found ; by auscultation mucous rattling was heard all over the chest ; cough accordingly loose and not frequent ; the child refused everything but water. 13th, respiration 30–40 ; pulse 120 to 130 ; skin moist ; cough loose and more frequent ; takes some solid food and much drink. 14th, respiration is varying from 36–50 ; shreds of false membrane begin to be mixed with the secretion from the trachea ; pulse 128 ; refuses food and medicine with obstinacy. 15th, respiration 60 ; pulse very frequent and irregular ; agitation and insufficiency of respiration beginning to become more and more evident ; no hepatization of the lungs ; secretion of the bronchi ceases ; face pale. 16th, respiration very laborious, dry, lower lobes of lungs sound dull on percussion ; death in the night.

Autopsy.—Lower part of lungs œdematous, and on their surface interlobular emphysema ; the air passages from the posterior part of the epiglottis down to the smaller bronchi, lined with casts of false membranes, partly loose, partly adhering ; the smallest bronchial ramifications filled with purulent fluid.

Case 11.—M. B., a small fat girl, of one year and eight months, was brought on the 1st of October, 1859, to the dispensary, in the asphyctic stage of laryngeal croup, being sick for two days, the affection having rapidly grown to the present alarming state, medical advice not having been asked before ; the cyanosis, with labored and rapid (60) respiration being the most prominent symptoms. Pulse very frequent, small and intermitting ; respiration was principally abdominal, the thorax moving in comparison with the other observations little ; on percussion the left side of thorax sounded dull, voice extinct, cough rough and noisy, but short. My colleague, Dr. Herzog, under whose charge the child was brought, seeing how useless all medicines, that might have been ordered, would be, explained to the parents the nature, danger of the affection, and how, perhaps, in the operation of tracheotomy, a slight chance to save the child consisted ; the operation was consented to, and immediately performed, Drs. Herzog, Simrock of Ward's Island Hospital, and Dr. Teller, lending their valuable assistance ; chloroform was again used ; in the operation nothing worth noticing occurred ; a single tube only could be introduced ; immediate and marked relief followed the evacuation of a great quantity of mucus and purulent secretion, natural color of face returned but slowly ; respiration 46 ; pulse 160 ; pneumonia of the two lower thirds of left lung ; bronchitis in

the right; the change in the aspect of the child before and after the operation is very gratifying, yet the prospect of recovery small. The following day the single tube is replaced by a double one; respiration 60–70; pulse near 200; died easy twenty-four hours after operation. No post-mortem examination permitted, but could scrape portions of false membranes with my finger out of the trachea from below and above the incision.

Case 12.—T. S., boy two years and five months old, suffering for several weeks from purulent discharge of the right ear with swelling of the right cervical lymphatic glands, and slight bronchitis of the right side, was taken with laryngeal croup on the 1st of October, 1859; the course of the laryngeal affection was not arrested by the judicious and energetic treatment of my friend, Dr. Krehbiel. I saw the child with him on the 3rd of October; we found the boy in the asphyctic stage of laryngeal croup, fauces and tonsils red, swollen, but free of exudation or ulcers; around the right ear, and on the right cheek, an eczematous eruption; pulse small, irregular, very frequent; respiration 28, labored, noisy, no voice; percussion showed the lungs everywhere clear; jugular and cardiac fossæ very retracted during each respiration; from this latter fact, and the not frequent number of respirations, I deemed myself justified in assuming the lungs free from pneumonia and bronchitis, although Dr. K. did not share my opinion in regard to the latter, he judging from the auscultatory symptoms, remarked by him one and two days before. The further result showed my conclusions erroneous. The boy having been put under the influence of chloroform, tracheotomy was performed and the boy after the expectoration of shreds of false membranes greatly relieved; respiration now 44; pulse 144; and auscultation now convinced me of my error, the right lung being evidently to a great extent affected with bronchitis; in the evening fever increased; skin dry and hot; respiration noisy, about 50; pulse 150–160; secretion of bronchi less liquid; no more pseudo-membranes expelled. October 4th, after a severe fit of cough a piece of membrane is said to have been expelled during night; thereon relief and sleep for several hours. In the morning, pulse 180 to 200; resp. 56 to 60; agitation alternates with drowsiness; respiration evidently insufficient, is mostly abdominal; on the left side, good vesicular respiratory murmur; on the right, dulness of sound from percussion, and only bronchial respiration. 5th. Died early in the morning, nearly two days after the operation. No necroscopy.

Case 13.—M. O., a fat and very robust girl of 4 years, two

days ago suddenly in the night, attacked with all the symptoms of laryngeal croup, was treated by Dr. Rosswog with emetics, leeches and submurias hydrarygri; the disease, however, steadily progressed in gravity. I saw her, with Dr. R., in the night from 3rd to 4th November, 1859, when she presented the following signs: marked cyanosis, leech-bites in a wide circumference suggilated and bleeding still; retraction of jugular and cardiac fossæ very great; respiration hissing, labored, about 22 to 24; pulse 150 and irregular, small; face pale, of a livid hue, her general expression being rather apathetic, and bordering on coma; no dull sounds by percussion perceptible; as far as by auscultation could be ascertained, the lungs seemed free. Tracheotomy was performed. In trying to insert the tube, the hook slipped from the trachea; by keeping the wound dilated and fixed with a blunt hook inserted on each side of the tracheal incision, the tube at last was placed; by suction and artificial respiration, the trachea was freed from its contents, and the child soon in a very satisfactory and promising state. 4th Nov. (10 hours after operation) Resp. 32; pulse, 120; had slept well during night; little loose cough; no false membrane expelled; great thirst; no appetite; strong mucus rattling all over the chest, principally in the upper lobes. 5th. Resp 36; pulse, 126. 6th. Resp., 44; pulse, 140 to 150; no respiratory murmur on the right side; in collapse. 7th. Death in the morning.

Autopsy.—Glottis nearly closed by thick exudation on the the mucous membrane, but not above the glottis; from it downwards the whole air passages to the bronchi of third and fourth order of both lungs lined with a single cast of pseudo-membrane; the smaller ramifications full of purulent, frothy mucus; the interlobular emphysema very prominent, extending to the anterior mediastinum, there being single cavities of the size of a pigeon's egg, filled with air; the inferior lobe of the right lung much congested and on its diaphragmatic surface around old adhesions with the adjacent serous membrane, fresh ecchymoses.

Case 14.—A. C., a stout boy, 2½ years old, was seen by Dr. Krehbiel, on the 5th of December, 1859, attacked with laryngeal croup, but no exudation could be seen in the fauces. On the 6th a deep ulceration on the right tonsil was formed; the lungs, after a careful examination, found free; the difficulties in the respiration were growing so rapidly, in spite of all therapeutical means, that on the 7th tracheotomy only was deemed to hold out some hope for the recovery of the patient; respiration very labored, 30, hissing; cardiac and jugular fossæ markedly retracted during each inspiration; pulse very frequent and

irregular; face cyanotic; no part of the lungs proved hepatized by percussion, and, having brought the boy under the influence of chloroform, the operation was performed. When the trachea was opened, a gush of mucus and a complete tube of false membrane was thrown out with great force, followed by perfectly free respiration. The cast of pseudo-membrane thrown out was about an inch in length, of the diameter of the trachea of the boy. One end of the piece had a ragged appearance, and was very thin; the other edge had at least one line in thickness, and its margin was even; no marks of ramification on it; the effects of the anæsthetic were slow in disappearing; a good respiratory murmur could be heard all over the chest; pulse, 150; resp., 36. Six hours after the operation, the boy was found soundly asleep, having taken before with appetite, solid and liquid food offered to him; his skin hot and dry; resp., 40; pulse, 140. 13 hours after the operation, the boy is reported by the parents to be taken with convulsions, not preceded or accompanied by any change in the respiration, which soon ended fatally. About five hours after death I removed the tube from the corpse, still warm, and found the lower half of the inner tube perfectly choked by very viscid mucus. Autopsy not permitted.

The annexed tabular arrangement will facilitate the general view of the statistics of the fourteen observations:

	No. of Observation.	Date of operation.	Age. yrs.	Age. mths.	Result.		Number of days between Operation and Death.	Cause of Death.	No. of days betw'n Operation, and Removal of Tube.	No. of days betw'n Operation, and Clos'g of Wound.
BOYS.	1.	Jan. 25, 1853	4	2	Recov.	—	—	—	8	18
	2.	June 27, 1857	4		Recov.	—	—	—	6	21
	4.	May 1, 1858	2	10	—	Death.	31 days.	Anæmia.	9	—
	7.	Jan. 4, 1859	2	2	—	Death.	2 hours.	(?)	—	—
	8.	May 27, 1859	5		—	Death.	1 day.	Convulsions.	—	—
	9.	June 27, 1859	5		—	Death.	4 "	Suffocation.	—	—
	12.	Oct. 3, 1859	2	5	—	Death.	2 "	Bronchial Croup.	—	—
	14.	Dec. 7, 1859	2	6	—	Death.	13 hours.	Suffocation.	—	—
GIRLS.	3.	July 8, 1857	3		Recov.	—	—	—	14*	22
	5.	Aug. 26, 1858	4		Recov.	—	—	—	14	25
	6.	Sept. 5, 1858	2	4	Recov.	—	—	—	8	30
	10.	Aug. 10, 1859	4	3	—	Death.	5 days.	Bronchial Croup.	—	—
	11.	Oct. 1, 1859	1	8	—	Death.	30 hours.	Bronch. Pneumonia.	—	—
	13.	Nov. 3, 1859	4		—	Death.	4 days.	Bronchial Croup.	—	—

* The tube was taken out on the 5th day after operation, re-inserted on the 9th, and again removed on the 14th after operation.

ART. IV. *Transactions of the King's County Medical Society.* Prepared by a committee of publication.

JUNE.—*Removal of tonsils in Scarlet Fever.*—Dr. BELL reported the following case :—A little boy, æt. 2 years and 3 months, was taken with scarlatina on the 25th of February last, during the existence of enlarged tonsils from other causes. From the beginning of scarlatina, hoarseness was a prominent symptom. The tonsils were as large as almond shells, and perfectly smooth, and the whole face of a florid red color. On the fourth night of the disease he was very restless, face much flushed, unable to lie down for the greater part of the night. Towards morning he had bleeding from the nose, after that he lay in a semi-recumbent position and had some sleep.

On the fifth day there was less fever, and the efflorescence declining, but the face was full and of increased redness. Eyes injected ; tonsils larger and very hard to the touch ; they appeared as if contained in a tightly drawn membrane of dark scarlet redness. The night of this day was an aggravation of the last preceding, and relief came in the same way by epistaxis. On the sixth morning the child had a very languid appearance, had dull red eyes ; was very peevish, refused nourishment, and was unable to lie down ; and the tonsils so enlarged as to touch each other. Considering that the tonsils were the cause of all the untoward symptoms, and seeing no prospect of their resolution or suppuration, I determined to remove them, or at least the offending portion of them. I called on my friend, Dr. Isaacs, to assist me in doing so, and the operation was performed, though with considerable difficulty, on account of the largeness of the tonsils and the smallness of the throat. The instrument was the tonsillitome. The portions removed were very hard, and not in the least indicative of suppuration. We were both surprised in not encountering what we most apprehended —hæmorrhage, which was so slight as not to require a remedy.

From this time amendment took place; no more suppuration than is usual from excised tonsils in other cases. Had a little anasarca, but it was not obstinate, and the child is now well.

I believe this patient would certainly have died, but for the operation performed, and I shall, unhesitatingly, apply the same remedy in other cases which may occur in my practice. Scarification of the tonsils was thought of, but the probabilities of troublesome bleeding were greater, and immediate relief less likely. And in performing the operation of excision, I hardly need add that we relied, with great confidence, on Squibb's *persulphate of iron.*

Pleurisy with Effusion without Dyspnœa.—Dr. Mitchell re-

lated the following case:—A gentleman, apparently 35 years of age, complained of a general sense of debility, loss of appetite, and slight pain in the left side, increased on making a full inspiration; no cough or difficulty of breathing. On examining the chest, by auscultation and percussion, evidences of pleuritic effusion were found from a level with the nipple downwards. The pulse was very rapid, being 126 a minute, while the respirations were little increased in frequency. A dozen leeches were applied near and below the left nipple, and ten grains of calomel and ten of Dover's powders administered.

On the following morning, the patient was found quite comfortable; no pain except at the end of a deep inspiration, pulse 108. Eight leeches were ordered, and a pill, of calomel three grains and opium one-quarter, to be given every three hours.

The day following, the pulse was 96, pain entirely relieved, patient had slept well, could lie with equal comfort on either side or on the back. The effusion had so far increased as to fill the left side of the chest to within three inches of the collar bone. A large blister was applied to the chest, and the calomel and opium pill exchanged for calomel, squill, and digitalis.

On the third day, the pulse was from 86 to 90; skin natural, respiration always free; urine abundant, but not to an unusual degree; no cough or pain; complained greatly of the nausea produced by the medicine, but the blister had given no inconvenience; no appetite; fluid still increasing in quantity. Treatment continued, the blister being dressed with mercurial plaster.

Fifth day, slight signs of salivation appearing, the pills were stopped, and, at the earnest solicitation of the patient, medicines were discontinued. The fluid filled the left cavity of the thorax, so that no sign of respiration in the left lung could be recognized. The dullness on percussion was complete throughout. The ribs on the left side moved but slightly during the respiratory acts. The pulse was about 80. Respiration unimpeded, decubitus easy in all positions, and but for the effects of remedies, the patient was perfectly comfortable, often declaring that he would be perfectly well if I would only let him alone.

After a suspension of the calomel and digitalis his appetite and good spirits returned. Various diuretics were substituted with but little advantage. About this time the heart began to be displaced, and gradually moved from its normal position, until it was found to beat on the right side of the sternum only. During this transposition, the pulse varied, beating at the rate of 50 a minute for a few seconds, and then for a few seconds

going up to 80. In twenty-four hours after this variation commenced, it became regular at 50 beats a minute. The operation of paracentisis was considered, but as there was no dyspnœa, or other symptom of disease, except what was ascertained by physical exploration, it was decided to omit it for the present. At this time, being three weeks from the attack, Dr. Isaacs saw the patient, and, at his suggestion, he was directed to take five grains of iodide of potassium three times a-day, and a moderate diet allowed, with passive exercise out of doors. On one occasion of the application of a blister, after the iodide had been in use for a few days, the secretion of urine was suddenly augmented. Acting on this hint, the tincture of cantharides was administered, in conjunction with the iodide of potash, with the effect of producing a freer action of the kidneys.

It is now six weeks since the commencement of the attack. The patient attends to business and rides out daily, has a good appetite and feeds well, with the exception of a little debility. The heart is making its appearance on the left side of the sternum, but still beats at considerable distance from its normal situation. The air can be heard entering the lung in the vicinity of the upper angle of the scapula. The pulse has lost its morbid slowness, and remains at about 80. The respiratory movement is, as it has continued throughout the disease, apparently natural, and there is hope that the left lung will yet resume its function.

Case of Stricture of the Urethra, with retention of Urine.—Rupture of the Urethra behind the stricture, and consequent extravasation of Urine, into the cellular tissue of the perinæum and scrotum.—Relieved by free incisions.—Perinæal section performed two months afterwards.—Recovery.—Dr. Isaacs reported the following case:—On the 18th of February, 1859, I was requested by Dr. John Duff, of Bridge street, to see a man æt. 45, residing in Tillary, near Navy street. The patient was a laborer, of naturally strong constitution. He had suffered from stricture of the urethra for the last seven or eight years, and had frequently experienced retention of urine. In his present attack, which had been of unusual severity and duration, the urethra had given way, behind the point of stricture, and the urine had become extravasated, into the cellular tissue of the perinæum and scrotum. Dr. Duff, who was sent for at this time, immediately recognized the difficulty, and called me in consultation. The patient was very much prostrated, the tongue greatly furred, pulse weak, and varying from 125 to 140, features sunken, and considerable agitation of mind, with despondency. The scrotum was as large as the head of a child a year old, and of a very dark purple color. The integuments of the groin, and

lower part of the abdomen, much discolored. The perinæum was livid, tense and shining; we placed the patient under the influence of a mixture of one part of chloroform to three parts of æther. Insensibility having been produced, I made two very long and deep incisions into each side of the scrotum, and another deep incision through the scrotum and into the perinæum, following the course of the median line. Very large quantities of dead and very offensive cellular tissue, pus, and urine, were discharged; the perinæum was the seat of a collection of pus, and urine, as large as a turkey's egg. Through the opening into the scrotum, the finger could be passed, into a large cavity, extending a considerable distance above the external abdominal ring. For three days after the operation, the symptoms were typhoid, and of the most unfavorable character. There was great prostration, with subsultus, partial delirium, picking at the bed-clothes, and involuntary evacuations, &c. Stimulants and quinine, however, with supporting diet, were freely used, and with the greatest benefit. The general condition of the system was much improved, the sloughs separated, and healthy granulations sprang up. He continued to gain, in every respect. On the 18th of April, *two months from the time of operation*, his condition was as follows:—His general health was very good for some time past, he had walked out every day, all the sloughs had separated, the inflammation and swelling of the parts had entirely disappeared, a fistulous opening existed, in the centre of the right half of the scrotum, through which about three-fourths of the urine passed out; the remainder was discharged, at the orifice of the urethra. A fistulous opening also existed at the central point of the perinæum. A probe strongly curved could be passed in about three inches, but did not apparently enter into any portion of the urethra. It had been previously ascertained, by repeated trials, and also at the present time, that the introduction of any instrument into the bladder was impracticable. On this day (the 18th of April), I proceeded to perform the operation of perinæal section.

I was very kindly and ably assisted, by Drs. Enos, Hutchison, Kissam, Duff, Murphy, and my friend and student, Mr. Thomas Baylis. A silver catheter was introduced, as far as the stricture, which was just anterior to the bulb of the urethra. An incision was then made, commencing just above the scrotum, and passing downwards, in the median line of the perinæum, completely through the scrotum, and even a short distance below it. The various tissues were successively divided, until the end of the catheter was exposed. A probe was then introduced, into the stricture, as far as it could be

carried, and along this a steel director was passed. The silver probe was now withdrawn, and the stricture was divided, upon the director, with a small bistoury. When this had been done, it was found, that another stricture existed, in the membranous portion. This was freely divided, in a similar manner, and after considerable difficulty, *a No. 2 silver catheter* was passed into the bladder, the urine flowing freely from it. The sinus which extended very far into the perinæum, was laid open apparently throughout its whole extent. The operation was attended with great difficulty, on account of the confused state and appearance of the parts, arising from the previous extensive sloughing, and loss of substance, the existence of sinuses, etc., and was therefore very tedious, occupying an hour and a half. The catheter was allowed to remain four days, and on its removal, *it was found to be impossible, to pass any kind of instrument into the bladder*, the irritability of the urethra, being excessive. Three or four days afterwards, repeated attempts to introduce instruments also failed.

After then waiting for about ten days longer, the patient was placed under chloroform, and another trial was thoroughly made, with the same unsuccessful result after this, all attempts to pass instruments were discontinued. The urine passing more and more by the natural passage, and with a small, but gradually increasing stream. The opening of the scrotum, gradually closed, so as to finally allow the passage of merely a few drops of urine.

I saw the patient on the first of June. The opening in the scrotum, had healed up. He informed me, that he now made quite a full stream of urine, and that it passed entirely by the natural channel. On introducing a No. 4 gum elastic conical pointed bougie, I found to my surprise, that it entered the bladder, with the most perfect ease. Two days after, I passed a No. 6 bougie, again two days afterwards a No. 8 was passed. On the 9th of June, after passing a No. 9 gum elastic bougie, *I introduced a No. 10 silver catheter, with the greatest facility and drew off the water.* Since then a large bougie has frequently been passed by the patient, and he has been recommended to introduce an instrument regularly twice a week.

His condition is now in every respect, very satisfactory. A review of the facts, in this case, suggests the following considerations:

1st. When I was first called to the patient, he was in the state already described, and lying in a very small uncomfortable room, which was very imperfectly lighted. Owing to the enormously swollen, diseased, and confused state of the parts,

and the great depth of the strictured portion of the urethra from the surface, the operation of complete perinæal section would *then* have been necessarily very tedious, requiring a long time for its performance, during which he must necessarily have been under the influence of an anæsthetic. I am satisfied, that if it had then been attempted that the protracted influence of chloroform, and the disturbing effect, if not actual shock of the operation, would in all probability have destroyed his life. Under these circumstances, it was deemed most judicious to defer the operation of perinæal section, with division of the stricture, etc., and simply to make deep incisions into the scrotum and perineum, so quickly that he would be only a few moments under the influence of chloroform.

The result has evidently confirmed the correctness of the decision.

2. The importance of always introducing a full sized catheter into the bladder, is here also strongly demonstrated by the great annoyance and trouble which resulted from the omission to do so in this instance. The operation, however, was so tedious, fatiguing, and attended with so much difficulty, that I confess I was very glad to be able to get *any* instrument into the bladder.

I would, however, never be satisfied again, until I had introduced a large sized catheter into the bladder.

3. It is an interesting fact, that after the immediate irritation of the disease, and of the operation, had passed away, that an instrument could then be introduced so easily, and that dilatation could so soon be accomplished, so that a very large catheter was passed, with the utmost facility. This may perhaps be consolatory to those surgeons who may encounter similar difficulties in their practice.

JULY.—*Malignant Pustule*—By Dr. D. C. Enos.—Mr. L., æt. 18, of previous good health and habits, but of strumous parentage, his father having died of consumption, was taken ill on Wednesday, July 22d, 1859. A little pimple appeared on the chin, just below the right angle of the mouth. It began to swell, and the swelling extended to the whole lower lip. He was a little chilly, and felt depressed. On Sunday he called at the office of Dr. Kelly, who saw and recognized the difficulty and prescribed for him—applied a poultice to the part. The pimple or little boil began to discharge a little pus; the lip had discolored blisters on its vermilion border. I saw him in consultation with Dr. K., first on Monday evening. The lower lip was immense, and the swelling had extended down over the chin, and out upon the left cheek, was firm and brawny to the feel, and of a dingy hue; the mucous membrane was sloughing

from between the lip and gums; the pulse was rapid and weak, 120 to 128. Several little apertures were seen on the lip; we divided it freely from below the vermilion border through its entire substance, to the apex of the chin. It bled, but discharged no pus; the tissues did not retract and the cut sides were in contact. We gave him sulph. quinine gr. ij., every four hours, and intermediately ten drops of the muriated tincture of iron, milk punch, wine whey and beef tea, and a pulv. Doveri at night. He was very anxious about himself, apprehending a fatal result.

Tuesday morning.—No better; on removing the yeast and flaxseed poultice which we had applied to the part, the skin had united so that it required some force to open the wound. The right half of the lip looked a little better, and the pustule also; swelling less, and on pressure a little white matter could be forced from several openings in the lip. The swelling, however, had extended on the left cheek, and down the neck was hard and more livid. We extended the incision through the border of the lip, put a tent in the wound, and reapplied the poultice; treatment continued; had considerable pain in his bowels, so that opiates had to be given. His bowels had been freely evacuated by blue pills and oil.

Wednesday, 8, A. M.—Had slept but little; *face more livid;* pulse, 130. 5, P. M.—Sinking; lip cool; pus oozes from several points on the lip; no pus from the incision; did not deem it best to cut more; Prof. Parker saw him at 8 in the evening. He advised, though rather reluctantly, making two free incisions in the cheek, which I did, one 4 and the other $3\frac{1}{2}$ inches long, through the skin and cellular tissue. He supposed we should find pus, but none followed the knife. They bled more freely than the first incision; blood was dark. He advised the continuance of the same medication, but the patient gradually sank and died the next day at 2, P. M.

Dr. Cullen took special note of the pain in the bowels in this case, stating that although he had had most unusual opportunities for studying the character of malignant pustule, having seen more than fifty cases of it, he had never known one where pain in the abdomen or chest did not occur in the course of the disease. He had seen three cases in Brooklyn. These three, like all those seen in the early part of his professional career, had the pain spoken of.

According to the experience of members present, malignant pustule appears to be a recent disease in Brooklyn, several cases having occurred within the last three or four years, while none are recollected as having occurred earlier.

Hydrothorax.—Thoracentesis and discharge of two hundred and

six ounces of serum.—Dr. A. N. Bell reported the following case:—A sailor, 26 years old, was admitted to the Brooklyn City Hospital on the 24th of July last, in a state of collapse. His only tolerable position was sitting, leaning forwards, inclined to the left side. He had great dyspnœa and general lividity of surface, which was increased by attempting the recumbent position. The jugulars were distended and knotty. Altogether his aspect was that of threatened asphyxia. He had been under questionable treatment for supposed heart disease about three weeks, and on the morning of the day he entered the hospital, he was directed to take the remainder of the medicine which had been prescribed for him, there being a double dose of what he had taken at intervals for several days. The last dose so much increased his dyspnœa, and he felt so much weaker, that he was on this account sent to the hospital.

For the immediately urgent symptoms, which were deemed as probably owing to an overdose of digitalis, brandy and carbonate of ammonia were given with relief. But the symptoms were still severe. The whole circumference of upper half of body anasarcous, leaving deep pits on pressure, and on the left side there was a rounded prominence extending from the hypochondriac and epigastric regions to a line with the axilla—the appearance was that of being pushed out by something within. On *auscultation*, this was found to be occasioned by displacement of the heart, the apex of which was beating at the *fifth intercostal space midway between the axilla and nipple*, the impulse being very weak and rapid, and the sounds diffused. Over this space, the respiration was bronchial; excepting this, on the left side, it was puerile. On the *right side* no respiratory nor vocal sounds audible.

Percussion; over the cardiac tumor, dull; otherwise on the left side resonant. Over the sternum, and on the right side, uniform dullness.

Of the *diagnosis*, there could be no question; large and rapid effusion into the right pleural cavity.

The case was deemed one calling for immediate thoracentesis, as the only available means for relief. Dr. Hutchison, the surgeon then on duty, was requested to operate. The instruments used were the trocar and stomach pump attached, and the thorax was punctured in the eighth intercostal space, in a line with the axilla. The fluid drawn off measured *two hundred and six fluid ounces.* On testing, more than half of its volume consisted of albumen, though it did not coagulate spontaneously.

Just before the operation, pulse 108; respiration 28. Circumference of chest; over the nipple, forty-two and one-half

inches, the right side being half an inch larger than the left; over the epigastrium, it was three-fourths of an inch larger.

After operation, pulse 86; respiration 20—both feeble. Circumference of chest over nipple thirty-six and one-quarter inches, being lessened six and one-quarter inches by the tapping, and the *left* side, instead of being half an inch smaller, was now found to be two and one-quarter inches *larger* than the right.

The patient was put upon calomel, squill and ipecac, in small doses repeated every four hours, and a blister plaster applied to the right side. The blistered surface was kept sore for four days; and the powders having been continued regularly for the same period of time, were now discontinued on account of slight ptyalism. He was now put upon the iodide of potash, but two weeks afterwards the syr. of the iodide of iron was substituted for this, as being tonic.

Improvement took place from the time of paracentesis, and progressed steadily. The heart gradually returned to its place; the respiratory sounds returned to the right lung, and the shape became symmetrical.

For the first few days after the operation, he passed an average of sixty ounces of urine daily. His skin also acted freely; indeed the whole powers of his system seemed to be aroused to his rescue, immediately after tapping.

From the magnitude of the case, the patient was detained in the hospital for careful observation, and was finally discharged *well*, on the 5th of November.

Case of Internal Derangement of the Knee-joint. By Dr. C. V. Isaacs.—On the 5th of April, 1859, I was requested by Dr. J. M. Homiston to visit with him, in consultation, a young man, about 25 years of age, residing in East Broadway, New York. The patient stated, that about a fortnight previously he had struck the inside of his knee-joint against a table, twisting or wrenching his foot somewhat at the same time. Immediately afterwards, he found that he could not walk, without considerable pain and difficulty. The knee became inflamed and swollen to a slight degree, but this condition soon disappeared under the use of the ordinary means, conjoined with repose. I found upon examination, that there was now no swelling, pain, or deformity of the joint, with or without motion. Pressure, however, upon the internal portion of the knee-joint, occasioned some pain. He could neither flex nor extend the limb to its normal extent and the attempt to do so caused considerable pain. In walking, the heel was not fairly brought down to the ground; he could, however, stand fully and squarely on the foot, bringing the sole completely to the ground, but with much

pain and difficulty. From the history of the case, and the condition of the limb, I considered that there was internal derangement of the knee-joint, consisting most probably in a partial displacement of the internal semilunar cartilage. In conversation with the patient, having flexed the leg as far backwards as possible upon the thigh, I endeavored to distract his attention, and then suddenly and forcibly extend it, but the patient was too rapid in his movements, and I did not succeed. He was then placed under the influence of chloroform. Dr. Homiston now firmly grasped the affected thigh, and held it steadily, while, seizing the affected foot and leg, I flexed the leg upon the thigh as far backwards as possible, and then suddenly extended it to the utmost.

This manœuvre, I repeated perhaps a dozen times, until I found by comparing the limbs, that they were both equally straight. After the influence of the chloroform had passed away, we found that the patient could flex and extend the limb as usual, and in walking brought the sole of the foot firmly and evenly down to the ground. In four or five days after, he walked from New York to see me, a distance of about a mile and a half; a slight degree of tenderness and stiffness remained about the joint for two or three weeks, but this subsequently and gradually disappeared, and the patient is now perfectly well.

This affection of the knee-joint, which has not been much spoken of by authors, is well described in a paper by Mr. Steele, published in the *Association Med. Journal*, March, 1855. "The accident is generally produced by some slip, fall, or sprain. (Sir A. Cooper observes, that the foot is often at the same time twisted or turned forcibly outwards.) There is little or no alteration in the appearance of the joint, no swelling or effusion, and no pain, when the limb is at rest. The patient walks with a limp, with or without pain, and cannot bring the heel to the ground, from inability to accomplish full extension of the limb. The motions of the joint are unimpaired, except that extension either by the patient's efforts, or those of the surgeon, can only be partially effected, so that the limb constantly remains a little bent." Authors do not agree as to the exact nature of this accident. Sir A. Coopr thinks it is a partial luxation of the thigh bone, from the semilunar cartilages. Mr. Smith, of Leeds, is of opinion, that the edge of the semilunar cartilage is turned upwards. Mr. Hey says, it is owing to an unusual tension of the lateral or crucial ligaments of the joint, or some slight derangement of the semilunar cartilages. If the treatment adopted in the case which I have related should not be successful, the plan of Mr. Hey might then be tried. He directs that the leg should

be fully flexed, the arm of the surgeon placed under the popliteal space, so as to separate as far as possible, the head of the tibia from the condyles of the femur, and at the same time produce rotation of the tibia. In his paper, Mr. Steele relates three cases of this affection, which he successfully treated.

Chronic Plurisy, with Spontaneous Opening, and Enormous Discharge of Sero-Purulent Matter.—By Wm. H. Dudley, M.D.—The patient, A. B., was born in Brooklyn. He is a silver-plater by occupation and thirty-three years of age. He has been a free liver, occasionally drinking to excess. For nine months previous to his present sickness, he had been temperate. On the 10th of May, he again became intoxicated, and while in this condition, was attacked with severe pain in his left side. Being unwilling that his friends should know his condition, he entered Flatbush Hospital, where he came under the care of Drs. Turner and Carpenter. The patient states that he was somewhat flighty, but that the disease was diagnosed pleurisy; that he was cupped and afterwards salivated and blistered. On the 6th of June he came under the charge of Dr. Dudley. At this time there was considerable tenderness of the gums, and mercurial fetor of the breath. His skin was dry and he complained of great thirst. He had not slept for three nights. A physical examination of his chest revealed entire dullness on percussion of the left side, with bronchial respiration, but no respiratory murmur. The apex of the heart beat a little to the right of the median line. Its sounds were feeble and not very distinct. There was no expectoration. The diagnosis was plurisy with effusion.

The treatment consisted of spts. minder., ant. et pot. tart. et digital., with an anodyne at night to procure sleep.

June 7th.—He has passed a comparatively comfortable night. His skin is moist. The same treatment is continued, with a seidlitz powder to move the bowels.

June 9th.—The skin is moist; pulse one hundred and ten; respiration the same as previously. There is no expectoration. The physical signs are about the same.

June 13th.—He expresses himself as much relieved and improved; has passed a good night; pulse one hundred and two; respiration twenty; tongue moist and cleaning; the bowels have moved and the salivation has passed away. The physical signs continue as before. Treatment directed—Hyd. prot. chlorid. gr. one-third, pulv. opii gr. one-fourth, scillæ gr. one-sixth, to be given in a pill every third hour, and a blister to be applied over the left side. His diet is to consist of tea and toast, mucilaginous drinks, moss-jelly, and fruits.

June 15th.—The pain in the side is relieved; the breathing is

easier; the skin is soft and moist; the pulse is ninety-eight, and respiration twenty. The treatment is to be continued.

June 17th—Another blister is ordered. The pills are omitted in consequence of a diarrhœa, and opiate pills to be given instead, one-half grain every four hours till the diarrhœa subsides or sleep is produced. Potass. hydriod. is also ordered gr. iij. every six hours. As he craves a change of diet, a few stewed oysters are allowed.

June 17th.—At this visit the patient expresses himself as much better, and demanded something more to eat. He is free from fever; his skin is moist and soft; pulse ninety-six; respiration twenty, and his tongue is cleaning. A slight respiratory murmur can be heard above the spine of the scapula, with bronchial respiration, and dullness on percussion through the remaining portion posteriorly. Anteriorly, the respiratory murmur is the same as posteriorly as low down as the third rib. The heart at this time beats about half an inch to the left of the median line.

June 21st.—He declares himself better to-day; has rested well and feels very hungry. His urine is increased in quantity and of a natural color. His bowels move morning and evening; pulse one hundred; respiration twenty. He can lie on either side for the first time, and has no pain in any part of his chest. The respiratory murmur is more distinct in the upper part of the lung, both before and behind. On the 18th he had a dry cough all night, which was followed the next morning by an expectoration of muco-purulent matter, which still continues.

It is a point of interest to notice, as the effusion diminishes, whether tuberculosis will be developed.

August 15th.—Physical signs. In the superior region anteriorly there is respiratory murmur, with crepitant rale as low as the third rib. There is strongly marked bronchial respiration at the sternal end of third rib, becoming less distinct as you proceed outwards. Broncophony. The sounds of the heart are loudest, and the impulse strongest at the lower end of the sternum. Posteriorly, there is dullness on percussion and ægophony at the middle of the scapula; with absence of respiratory sounds, and dullness on percussion from that point downwards.

August 8th.—An opening took place three inches below, and one-and-a-half inches to the left of the nipple, from which about *three quarts* of fluid, of the appearance of whey, were discharged. After this the cough and expectoration abated very considerably. This spontaneous opening was not preceded by any aggravation of the constitutional symptoms.

December 2d (four months after the opening occurred).—Examination of the chest. Left side, superior region, anteriorly, vesicular murmur and resonance on percussion as low down as the third rib. Below the third rib there is dullness on percussion and bronchial respiration. Posteriorly there is dullness on percussion, with ægophony about the middle of the scapula and dullness on percussion from this point downwards. The vibrations produced by the voice are transmitted to the hand perfectly, on the right side, but not at all on the left. The discharge from the opening continues of a sero-purulent character. The sound and impulse of the heart are strongest at the ensiform cartilage.

The patient is much improved in his general condition; has gained in flesh and strength; has a good appetite, a clean tongue, a soft and moist skin, and sleeps well in every position.

Cancerous Stricture of the Rectum.—Dr. Isaacs related the following case:—During a period of eight months past, I was consulted occasionally by Mr. J. S., æt. 65, a man of good constitution, and whose general health had always been excellent. He complained of a peculiar *twisting* pain in his bowels, frequently occurring for a few minutes at a time, during the day, also of an uneasy or uncomfortable feeling, in the lower part of the rectum, and which he found it very difficult to describe. It always occurred at the time of voiding his fæces, which were always passed in small quantities, on each occasion, and without pain. He had a passage from his bowels regularly, three times a day. During many months I examined the rectum very carefully by the finger, without, however, being able to ascertain any changes of structure. The last examination was made about two months previously to his death. About that time he began to lose his flesh and strength; he went to the country, where he spent some weeks. On the evening of the 13th of August, I was summoned to him in haste, and to my surprise found him dying. I was informed by my friend Dr. Langdon, who was present, that he had been called to see him about 9½ P. M., that he had gone down to his supper as usual, but had been suddenly seized, about 9 P. M., with most severe and excruciating pains in the bowels; which rapidly increased in intensity, and were attended with great prostration. Dr. L. administered stimulants and sedatives to relieve the pain and prostration; an enema also was given, but could not be made to pass up into the intestines. Upon examination, it was found that there were small tumors about the size of small hazel nuts, which protruded from the internal surface of the rectum, at a point as high as the finger could reach.

The abdomen soon became excessively tympanitic, the pulse feeble, the extremities cold, the respiration more and more difficult, and he died about 11 P. M., only about two hours from the attack of sudden and most agonizing pain.

Post-mortem.—The abdomen was enormously distended. On making an incision, gas escaped in immense quantities from the peritonæal cavity, *which also contained a very large amount of fæces*, lying in contact with the intestines, stomach, liver, and other abdominal viscera.

At the point where the peritonæum was reflected from the bladder on to the rectum, this intestine was found to be thickened, and indurated, and in fact a very dense stricture here existed. Immediately above this point, the intestine had burst, and the fæces escaped through an opening about the size of a twenty-five cent piece. The liver contained numerous masses of cancerous material, varying in size from that of a pea to that of a nutmeg ; they were cupped shaped on the surface. Microscopically examined, they presented myriads of cancer cells.

The gall bladder was very large, its walls thickened, and of a white color, resembling the pericardium ; internally its cavity was lined by a smooth, polished, and shining (serous ?) membrane. It contained about three ounces of a fluid almost as clear, colorless, and transparent as water. It resembled the serum of the blood, in its chemical reactions, but when acted on by nitric acid, exhibited although imperfectly, the play of colors which is shown by bile, when acted on by the same reagent.

The gall bladder contained three biliary calculi ; two of them were of the size of musket balls, the third was somewhat smaller. They consisted of cholesterine, and the coloring matter of the bile, with some salts. The gall bladder had evidently been for a long time affected with chronic inflammation, probably owing to the long-continued irritation of these calculi, and its function as a recipient of bile, long ago destroyed.

The condition of the peritonæal cavity was such as to prevent me from ascertaining positively, whether the neck of the gall bladder had become entirely obstructed, yet I should infer that this was the case. It is surprising that the cancerous stricture of the rectum should have occasioned such slight symptoms. When I last made an examination, it was not within reach of the finger. If a similar case should occur, the introduction of a rectum tube, or bougie, would probably lead to its discovery.

ORIGINAL LECTURES.

DISEASES OF CHILDREN.

Delivered at the College of Physicians and Surgeons of the University of the State of New York.

By A. JACOBI, M.D.,
PHYSICIAN TO THE CANAL STREET DISPENSARY, N. Y.

Lecture II.

Laryngismus Stridulus.

Scarcely in any chapter of infantile pathology do we meet with more confusion than in the expositions on laryngismus stridulus. The very large number of names that has been applied to the very same symptoms, shows that authors agree neither as to the nature of the affection, nor its cause, nor even always as to its symptoms, or its seat. Thus only is it possible, that the names of laryngismus stridulus, apnœa of infants, thymic asthma, croup-like inspiration of infants, crowing inspiration, spasm of the glottis, paralysis of the glottis, suffocative asthma, stridulous angina, internal convulsion, and many others, could be applied to the same affection. Thus only was it possible to mistake laryngismus stridulus (asthma Koppii) for spasmodic laryngeal catarrh (asthma Millari), and, as several modern writers have done, to separate spasm from paralysis of the glottis ; although it ought to be acknowledged, at last, that the symptoms of glottic spasm and glottic paralysis are not only the results of the same irritations, but also identical. It is, in my opinion, a fact which I am sorry to state, that with a single exception the authors on infantile pathology have been mistaken, at least in the physiological explanation of the symptoms of laryngismus. The exception is formed by Dr. Friedleben, of Frankfurt, a German, whose name I have had the honor of bringing repeatedly before the profession of our country, and whose eminent work, on the physiology of the thymus gland in health and disease, I again recommend to your attention. His expositions on our subject are, in my opinion, so satisfactory and convincing, that I willingly follow him, as far as I dare, in discussing one of the most puzzling subjects of infantile pathology.

Laryngismus stridulus is emphatically a disease of infantile age. It is observed in children, both healthy and sick, in their sleep or while they are awake, playing, eating, singing. The first stage of an attack of laryngismus is a sudden and entire apnœa. Respiration is stopped suddenly, entirely, for a few

seconds, even for a minute, the face is pale and bloodless, in attacks of long duration cyanotic, the skin cool, the heart scarcely perceptible, the entire muscular system in a state of paralysis. The second stage is that of a beginning reaction to this thorough inactivity, viz., the first action of the recurrent nerve stimulating again the function of the muscles of the glottis, after which the spinal nerves commence again to enliven the other respiratory muscles to such an extent as to produce a violent, deep, "crowing" inspiration. In the third stage, finally, the reaction is complete. Short convulsive expirations restore the functions of the respiratory organs to their former condition. Attacks of great intensity and long duration are usually attended with contractions of the hands, and even general tonic convulsions of the trunk (opisthotonus) and lower extremities. Sometimes general eclampsia has been observed to accompany the attack of laryngismus, but also to return without another attack, or an attack to return without eclampsia. Involuntary evacuations of the bowels have been observed to occur during the attack. It is seldom fatal, a large number of attacks have been observed in a single day, and the disease is apt to last for months. Whenever death ensues in the attack, it will be in the first stage; but it may be caused also by exhaustion of the nervous faculties, or by tuberculosis, or other local diseases being the last cause of the attacks.

The symptoms of the first stage of laryngismus cannot be explained except by a functional trouble, by paralysis, perhaps of the oblongated spine alone, perhaps of the nervous centres together. We are unable to state what are the alterations going on in the nervous system, but there is no doubt that the influence of the period of life in which laryngismus is observed, of insufficient or unappropriate nutrition, of foul air and morbid taints are strong enough to change or interrupt its functions, especially in such cases where, as will be shown later, peripheric influences will bring new irritations to bear on the suffering nervous centres. Paralysis of the muscles of the glottis alone is unable to produce all the symptoms of the first stage of laryngismus; for by cutting a recurrent nerve such general symptoms could never be produced. And the dissection of both the recurrent nerves give rise to real suffocation, pretty rapidly, but not at all suddenly; lungs and brain are hyperæmic, the cutaneous veins and heart full of blood; whereas post-mortem examinations in laryngismus show a positive absence of hyperæmia in the brain, and anæmia of the cutaneous veins and the heart. Death in laryngismus ensues in the same manner as in animals whose oblongated spine has been cut. They die either instantaneously, both respiration and circulation ceasing at once, or some few contractions of the extensors of the trunk and lower extremities are early observed; repulsion or retention of venous blood is nowhere found, neither in the brain, nor lungs, nor heart.

The crowing inspiration, and the convulsive expirations are symptoms of returning reaction, of the recommencement of nervous functions. Thus the attack is at an end, but not the disease. Crowing inspiration, after what I have said about it, is therefore not at all pathognomonic to our subject, nor is it right to mistake one for the other, but it is certainly a very valuable symptom. A very similar process is going on in asphyctic newborn infants, in which the first muscular exertions of the glottis, hitherto unsupported by other respiratory muscles, give notice of beginning life.

Uncomplicated laryngismus is never accompanied with fever. Its duration is very various, some children being affected but once in all their life, and recovering, some dying in the first attack, and some suffering for months, even years, from a series of mild or severe attacks, until they will either finally recover, or perish in the last attack. The disease is most frequent about the commencement of the first dentition ; that is to say, from the seventh to the twelfth month of life. About this period the general growth of the body is very remarkable ; especially the osseous system in all its parts undergoes a rapid development. The tubular bones grow longer, the medullary cavity wider, the epiphyses thicker ; the vertebral column, and the cranium increase in substance and size, the circumference of the thorax and abdomen becomes larger ; and at the same time the contents of the large osseous cavities, as brain, spine, lungs, heart, thymus, and the abdominal viscera gain in size and weight. This period is somewhat similar to that of puberty, not only in its physical, but also in its psychical relations. Neuroses are very common in either of these periods of life, where with the rapid changes in the substance and volumes of the organs unexpected changes in their functions may be observed to take place. It is no wonder, then, that the slightest causes may prove sufficient to greatly influence the nervous centres, exposed as they are to any irritations from any organ ; a slight indigestion, fright, refrigeration of the skin, morbid dispositions of any kind will sometimes suffice to bring on an attack of laryngismus, with its paralytic influence on the whole number of respiratory muscles. No less astonishing, however, is the fact that laryngismus is not very seldom observed at a somewhat later age. Such children as are suffering from a morbid taint, or rhachitis, or have been retarded in their general development by severe diseases, or injured in their health by either bad or superabundant food, will reach dentition and the general rapid development of the osseous system, at an unusually late time. Thus the attacks of laryngismus will appear later, and become the severer the more the nervous system has been affected before. In both very early and very advanced age cases of laryngismus have not often come under observation ; but there are some related of newborn infants, and up to the age of six or seven years.

The mildness or severity of the attacks of laryngismus will depend on the constitution of the patients and occasional causes; if such was not the case every one would resemble the other. The milder form will be particularly recognized by a milder appearance of the first stage of the attack, viz., the sudden paralysis of all the respiratory muscles, and the unimportance of the accompanying carpo-pedal or other spasmodic symptoms. Of this kind are those mild attacks which are described by Rilliet and Barthez, Hérard, and Ranking, and called "holding-breath spells" by J. Forsyth Meigs. The first stage of the attack is not very violent, and crowing inspiration is not always perceived, but in the cases witnessed by myself, I have never missed the convulsive expirations forming the third and last stage. "The most frequent cause of the paroxysms is contradiction. They are determined also by fright, pain, and crying," but I feel sure, after what I have observed myself, that the first causes will be such as have been named above. Further, in Dr. Meigs opinion, "they never occur spontaneously, and never during sleep," but I am sure that in the case of a tuberculous little girl of five months the patient was very often, sometimes several times during a day, awakened with a slight attack of laryngismus, or "holding-breath spell." I have been unable to comprehend any other difference between an attack of laryngismus and of holding-breath spell but that of a different severity of symptoms of the same affection. There are cases, however, without any paralysis of the respiratory muscles, but with crowing inspiration, which are to be distinguished from laryngismus stridulus. They are not the consequence of some trouble of the nervous centres, neither original nor produced by peripheric influences, but are those affections comprehended under the name of spasmodic laryngitis, or asthma Millari, which is not a general nenrosis, but a local affection, viz., catarrh of the larynx complicated with spasm of the muscles of the vocal chords.

Amongst the peripheric influences which we have been hitherto taught to consider of foremost importance in producing laryngismus, is hypertrophy of the thymus gland. Hypertrophy of the thymus was considered not only to be a frequent occurrence, but of particular tendency to exercise pressure on the recurrent nerve and thereby give rise to attacks of laryngismus stridulus. Even some of the latest medical journals report some cases of laryngismus in which this anomaly is said to have been found out as the cause of death. But Dr. Friedleben has satisfactorily proved, that the number of hypertrophied thymus glands that have ever been observed, is very limited indeed, and that of all the cases in which the thymus was really hypertrophied, only seven-twelfths died of laryngismus. The majority of thymus glands believed to be and described as hypertrophied had not at all exceeded, nor even reached, a normal development, and from careful observations and measurements, the author arrives at the conclusion

that the thymus gland is not able, neither in its normal state nor in its hypertrophied condition, to prevent respiration, to disturb circulation, to cause a pressure on respiratory nerves, to injure cerebral circulation nor the innervation of the muscles of the glottis, nor to exhibit in its own substance a periodical turgescence, produced by retention or repulsion of blood. The only periodical turgescence that really takes place in the thymus, is produced, physiologically, during the assimilation of food, but it has no influence in bringing on attacks of laryngismus, as such attacks will appear at any time and hour, before and after meals, and with any kind of food.

The whole number of cases ever observed of really hypertrophied thymus glands is about eleven or twelve. All of them are congenital, and not at all pathological; only one single case of inflammatory exudation into the tissue of the thymus, and its neighborhood, is known in the whole range of literature, and even this case did not occur in infantile age. In all of them, as far as it is stated in the reports, the thorax was developed in accordance with this anomaly, and in none of them, consequently, was there any reason to try the effect of therapeutical influences upon this congenital, as it were physiological, anomaly.

The only nerve, by which spasm or paralysis of the muscles of the glottis could be effected, is the recurrent. The only nerves that could be reached and influenced by the thymus gland, could be either the phrenicus, or the vagus *below the origin* of the recurrent. The latter is situated immediately on the trachea and protected on both sides in such a manner as not to be troubled by either enlarged bronchial glands or swelled thymus. The only pressure possible may be produced by the enlarged thyroid and the lymphatic glands into which it is naturally imbedded. They will sometimes swell, undergo tubercular degeneration, and give rise even to pathological alterations in the neurilema and primitive fibres of the nerves.

Thus it appears that the name of thymic asthma is wholly unscientific, as likewise the name of "asthma Koppii" is not justified by the facts. For Kopp, who wrote in 1830, has neither been the first to exactly describe this disease, being preceded by Hamilton in 1818, John Clarke in 1815, and Alexander Hood in 1827, nor the first to attribute its symptoms to a presumed hypertrophy of the thymus gland. This has been considered as the cause of laryngismus as early as in the seventeenth century by Felix Plater, 1712 by Budaeus, 1723 by Richa, 1725 by Scheuchzer, 1726 by Verdries, about the end of the eighteenth century by Peter Frank, 1826 by Velsen, and 1827 by Alexander Hood.

It is not my opinion, however, that affections of the nervous centres will always be the only causes of laryngismus; it must be considered as an undoubted fact that disturbances of the functions of the vagus and sympathetic nerves give rise to the very same symptoms. Thus any troubles of the alimentary canal,

superabundance of food although it may be of good quality, presence of a large number of ascarides in the intestines, and obstinate constipation produced by vicious nutrition and consecutive torpor of the muscular layer of the intestinal canal will be reflected on the nervous centres, and thereby produce the symptoms of laryngismus. In such cases the results of post-mortem examinations, and the symptoms during life are exactly like those following genuine affections of the cerebrum; thus, at all events, the nervous centre is foremost, if not alone, active in giving rise to the dangerous symptoms during life, not to speak of those cases of laryngismus which directly depend on craniotabes or hydrocephalus.

Dentition, too, is often reported to have been the cause of laryngismus; the symptoms being taken as reflex actions produced by the peripheric irritation of the n. trigeminus. If the degree of this irritation was such as it is generally supposed to be, its importance and danger would certainly not be overrated. But I am not of the opinion of many, particularly English writers, as Marshall Hall, etc., and of the public at large, that dentition itself is accompanied with the large number of dangers said to be brought on by it. In our own country, even in our large cities, we are used to see, almost every week, dentition enumerated amongst the direct causes of death, and the prejudice of both public and physicians lays too much stress on the supposition that a physiological process will by itself produce death. Therefore I feel justified in reminding you of the fact that dentition is almost the only visible sign of the general alteration which takes place about this period of infantile age, especially in the osseous system, and certainly it is feared by the public for no other reason but because it lies open to the eyes of every body. There may be, in some rare cases, an abnormal development of the maxillæ and their alveoli, or abnormal osseous deposits or infiltrations in the osseous tissue and its canals, and some unusual irritation of the last ramifications of the n. trigeminus, but the influence of normal dentition in producing diseases, and causing death, is certainly not such as is often supposed even by well educated medical men.

In some cases, described by Dr. Friedleben, a congenital hypertrophy of the thyroid gland has probably been the cause of laryngismus. The patients were newborn infants, of normal development and born by normal labors. There were no constitutional causes of the disease, but a remarkable vascular swelling of the thyroid gland. Whenever the swelling increased, the veins of the face and head increased in size also, the face grew livid and the extremities and spinal column exhibited slight tonic convulsions. The recurrent nerves were entirely surrounded by the glandular tissue, their neurilema looked unusually red, and their function was probably injured during the occasional swellings taking place during life-time. Moreover the anatomic-

al position of the thyroid gland gives a great deal of probability to the supposition, that whenever its volume is unusually large it is able to exercise a pressure on the trachea, and to give rise to retention of blood in the cerebral veins, to dyspnœa, to atelectasis, and to a slow carbonization of the blood. In such cases we are certainly justified in supposing the swelling of the thyroid gland to be the cause that the nervous centres are not able to act in a normal way, especially as the children were not in the period of life when laryngismus is a more common occurrence, and when bad food, super-abundance of food, and eccentricities in the normal development may give rise to paralytic symptoms in the respiratory functions. There is certainly no less reason to believe in the abnormal function of the recurrent nerve in such cases, where it is evidently subject to some pressure from either the swelled thyroid, or, in a later period of life, of the hypertrophied tracheal glands.

The latest attempt to discover a general and uniform cause of laryngismus in some local affection, has been made by an English surgeon, Mr. Hood. He seems convinced that the cause of laryngismus, which he considers as identical with crowing inspiration, is always found in enlargement of the liver. His pathology is as vicious as his etiology erroneous, therefore I omit criticizing the opinion of a single writer, as I consider it my duty to state scientific facts only, with their logical consequences.

The difference of opinions on the treatment of laryngismus stridulus is as great as on its nature and causes. The majority of modern writers, considering the disease to be spasm of the glottis, resort, in the attack, to derivants and antispasmodics. Applications of spir. sinap., and ol. hyosc., have been made, hand and foot-baths given, even the inhalation of chloroform has been recommended. From the remarks I have made on the nature of the disease, the conclusion must be drawn that no result at all can be expected from the action of those agents. The performance of tracheotomy, as recommended by some, is of no use, for the same reason ; no artificial entrance for the air is needed, where the inactivity of the respiratory muscles is the only cause of the dreadful attack. Antispasmodics, as cherry-laurel water, valerian, musk, asafœtida (given internally and administered in injections) will also fail to answer the indications. Bloodletting will certainly prove useless, except in some cases complicated with severe eclampsia. I feel almost sure that the first case of what is described as laryngismus, in the excellent manual of Prof. Meigs, of Philadelphia, in the words of Dr. Pepper, who observed it in a child of four months, has been somewhat endangered by the application of sixteen leeches ; to say nothing of its really having been a case of spasmodic laryngeal cattarh, or asthma Millari, instead of laryngismus stridulus, or asthma Koppii. The only indication, in an attack of laryngismus, is the thorough irritation of the respiratory muscles. If electricity could be applied at the

right moment, it would be of great value. At all events the patient ought to be kept in a sitting posture, and the access of air to be made as easy as possible. Sprinkling of the face with cold water, and application of ice or cold water to the sternum, will act as powerful stimulants. If the respiratory muscles could not be stimulated enough to recover their physiological power, artificial respiration must be resorted to. There are some undoubted cases in literature, of children who had become asphyctic from an attack of laryngismus, but were saved by artificial respiration being kept up until the temporary paralysis of the central organs was removed.

Of much more importance than the treatment of a single attack of laryngismus, is that of the general disposition and of the cause of the affection. Such authors, as take it to be a spasmodic affection, propose a protracted administration of antispasmodics, like those mentioned above; Bouchut recommends the endermic use of morphia. Others, attributing it to indigestion, or constipation, or diarrhœa, or worms, prefer either carminatives, or aperients, or astringents, or anthelminthics. Those who, like Mr. Hood, consider hypertrophy of the liver to be the only cause of laryngismus, do not know of anything more specific than calomel, and naturally, those who take the hypertrophy of the thymus as the cause of laryngismus, believe in iodine, and iodide of potassium as their panacea. This appears to be less indicated, for to what I have stated before I have to add, that, with one single exception, all the cases of hypertrophy acknowledged in literature are congenital, and not the results of inflammation or exudation. Thus, iodine, in such cases, is undoubtedly deprived of any effect, and I have no doubt that wherever iodine has proved to be of any benefit in laryngismus, it has done so by its effect on the small tracheal glands which are able, sometimes, when hypertrophied, to exercise pressure on the recurrent nerve. And, certainly, we cannot expect to have any influence in reducing the size of vascular swellings of the thyroid gland, which is also a congenital anomaly.

Dentition, finally, is, the night-mare of medical men writing on laryngismus, as on almost every other infantile disease, particularly in England. Marshall Hall directs, in laryngismus, the gums to be incised, in different places and directions, once, two, and even three times a day, and expects a cure from this kind of scientific butchery. I warn you most emphatically against following his advice to the extent in which it is given. In some cases cutting the gums may be indicated, and I practise it myself, but this readiness to operate on helpless infants, who are so unfortunate as to "teethe," that is to say, to be from five to thirty months old, is a mistake that cannot be too much reprimanded. I shall avail myself of some other occasion to explain my views on this custom of "lancing the gums" in a more explicit manner.

From the remarks I have made on the causes of laryngismus,

the therapeutical and dietetical treatment is distinctly indicated. Any cerebral disease that may be discovered must be attended to; laryngismus consequent on hydrocephalic condition of the brain will not be cured unless the other symptoms of hydrocephalus are removed. Such is the case also with craniotabes, which will require a continued treatment with phosphate of lime, and iron, and tonics in general, before the symptoms of laryngismus will be extinguished. Every anomaly, both material and functional, that may have the effect of weakening the organism in general, and the nervous system in particular, must be removed, and the general health taken care of. Nutritious and digestible diet, antiscrofulous treatment, cod liver oil, iron, and iodide of iron will prove powerful means of restoring health in the hands of a scrutinizing practitioner. Supposed or diagnosticated swellings of the tracheal glands, pressing on the recurrent nerve, require the constant use, for a long period, of iodide of potassium, or iodide of iron, and I need scarcely add, that all other influences of greater or less importance, as of fright, cold, indigestion, worms, must not be entirely overlooked, and are deserving of particular attention, although they have so often been greatly overrated. Thus it appears that much circumspection is needed in selecting the means of removing a disease which may have originated in consequence of many coördinate influences affecting the nervous centres. One case, as it occurred but recently in my practice, shows that even mental education may be necessary, and sufficient, to act beneficially on the cerebral functions. A little girl of about eleven months was affected with "holding-breath spells" for a long time, and to such an extent as to become asphyctic. I found out that the attacks always occurred whenever the child was contradicted, or refused anything she wanted to lay hands on. I then ordered a pailful of cold water to be kept always in readiness and poured over the fretful patient, as soon as any mental irritation would show itself in occasions like those that had always been sufficient to bring on the attacks. I may be allowed to add that three or four administrations of the same dose, in the course of a week, proved sufficient to soothe the temperament of the patient, and to entirely remove her attacks of laryngismus stridulus.

LECTURES ON THE ACCIDENTS

WHICH MAY OCCUR

SUBSEQUENT TO PARTURITION.

Delivered in the University Medical College, New York.

BY T. GAILLARD THOMAS, M.D.,

PHYSICIAN TO BELLEVUE HOSPITAL.

LECTURE I.

Post-Partum Hæmorrhage: its Prevention.

GENTLEMEN :—Before entering upon the all-important subject of post-partum hæmorrhage, I will solicit your attention to the investigation of the means of preventing its occurrence, which, in my mind, demands your earnest reflection and study quite as imperatively as the treatment of the accident itself. The imminent danger, awful responsibility, and manifest necessity for knowledge, developed by the occurrence of post-partum hæmorrhage, have arrested the minds of teachers and writers so prominently on its treatment as to have led, I think, to a laxity of emphasis with regard to those precautions, which, if thoroughly instilled into the minds of practitioners, would in a great degree diminish their experience in that complication of labor. I have often observed, too, that students of medicine about to take upon themselves the duties of physicians, could stand excellent examinations upon the treatment of hæmorrhage, while they would be entirely ignorant as to the means which would render the application of that knowledge unnecessary, and going into practice prepared, as they supposed, to cope with this formidable adversary, they have appeared to court rather than avoid its approach. Bear in mind that, if anywhere that trite housewife's adage with regard to the superior claims of prevention over those of cure, is applicable, it is tenfold more so here ; and never lose sight of the fact that a flooding, once fully under way, is not, by any means, always susceptible of relief ; you will find cases which will baffle your best directed efforts, and others where death will slowly but surely track and overtake your patient, even after you have overcome the immediate danger.

The frequency of post-partum hæmorrhage is, in great degree, due to a neglect of measures for preventing its occurrence. In the truth of this proposition, I feel sure that every logical mind will agree, after examining the statistics on the subject, and to assist you in doing so I cannot do better than to place before you, at a glance, the statements of the most reliable authorities.

Dr. J. Clarke	met with	post-partum	hæm.	in	1	out of	ev'y	1038 cases.
" Merriman	"	"	"	"	1	"	"	589 "
" Collins	"	"	"	"	1	"	"	153 "
" Cusack	"	"	"	"	1	"	"	140 "
" Lever	"	"	"	"	1	"	"	133 "
" Reid	"	"	"	"	1	"	"	120 "
" Churchill	"	"	"	"	1	"	"	78 "
" Von Siebold	"	"	"	"	1	"	"	121 "

It will be here perceived that while Dr. Clarke met with the accident in less than 1 out of 1000 cases, Dr. Churchill, practising in the same city, and therefore under the same climatic, hygienic, and national conditions, saw it in 1 out of 78, and that while Dr. Merriman's patients suffered from it in 1 out of every 589 labors, those of Dr. Reid were exposed to its dangers in 1 out of every 120. Now it may be said that this vast and startling difference was merely the result of accident, but would such a conclusion be rational or logical? A slight difference, or even a difference of two-thirds, might be thus accounted for, but when, as we see here, one practitioner meets with it ten times as often as another, what conclusion can be drawn but that it was due to some tangible and efficient cause?

The same difference will be observable, I think, in the results of the experience of practitioners with whom you will meet in your professional careers—some will tell you that post-partum hæmorrhage is the bane of their obstetrical practice, while others will assure you, truly, that they have never seen a case of any obstinacy or violence. In hospital practice, I have seen two violent cases, in private practice two, and in cases attended by students of this college, three or four; and I am free to confess, that in my opinion, every one (not excepting one which occurred to myself, and in which the patient narrowly escaped with life) could be traced to negligence on the part of the practitioner, with regard to the precautions which should have been taken to prevent the accident. Do not understand me that all cases of post-partum hæmorrhage can be prevented; such is not my belief, but I deem it of importance to impress upon you what I feel to be a fact, that with the preventive means about to be recapitulated, you will meet with it as rarely, perhaps, as 1 in 1000 cases, while without them you may have to deal with it as often as 1 in 78.

But it will be impossible for you to get a proper appreciation of this subject without an investigation into the *causes of post-partum hæmorrhage.*

Gooch and others have cited a kind of post-partum hæmorrhage occurring with a perfectly contracted uterus; this is calculated greatly to confuse and mislead the young accoucheur, since it tends to induce in him a distrust of the basis upon which all his efficiency in treatment must be founded. All admit that an injury to the os uteri, an adhesion of a small portion of the pla-

centa to the uterine wall, or the previous attachment of the placenta over the cervix, may give rise to such a condition, but it is of the first importance for you to engrave upon your minds the fact that *contraction of the uterus, and that alone, will check the flow of blood from its cavity.*

When we reflect upon the condition of the wall of the uterus, after the avulsion of the placenta, its numerous large mouthed veins left open, and its muscular structure laid bare by removal of its entire mucous covering, it must be a matter of surprise, not that hæmorrhage occurs, but that it occurs so rarely. And, indeed, did not nature at once come to our aid with her wondrously effective and ingenious mechanism, there would not be a possibility of avoiding a flow from the open gateways which would soon extinguish life.

Hæmorrhage, from other surfaces, is checked, as you know, by the formation of a coagulum in the mouth of the vessels; here that process would be too slow, and nature adopts another and more speedy method. The uterine vessels are surrounded on all sides by the muscular fibres of the uterus, between which they pass, and to which they bear very much the same relation as that which your finger would bear to the threads of a netted purse if pushed between its meshes. Draw upon the ends of the purse and your finger is compressed in proportion to the force applied; let the uterine fibres contract, and the extremities of its vessels are closed in like proportion; conversely, as the removal of force from the ends of the purse removes contraction from your finger, so does relaxation of the uterine fibres leave gaping the mouths of its large and flaccid veins. Before proceeding, let me beg you to appreciate this in its full force, for it is the keystone of the arch which bears up the whole pathology and treatment of puerperal hæmorrhage.

We may say, then, in general terms, that anything which induces an inert and sluggish state of the uterus, or anything which defeats its efforts at contraction, would constitute causes of post-partum hæmorrhage. As an instance of the first class of causes may be mentioned inertia uteri, and of the second, partial attachment of the placenta, or formation of clots within the cavity. Let the non-contracted condition of the organ be due to what it may, it is, in itself, the immediate cause of the sanguineous flow, and we may enumerate as special causes,

First.—Inertia uteri.
Second.—Uterine exhaustion.
Third.—Sudden evacuation of uterine contents.
Fourth.—Adherent placenta.
Fifth.—Distention of uterus by blood.
Sixth.—Mental emotion.
Seventh.—An excited state of the circulation.

Inertia uteri is the name applied to a sluggish state of the uterus, apparently due to some derangement in the nervous influ-

ence normally distributed to it. During the labor, while stimulated by the child's body, the organ has contracted feebly and irregularly, and having lost that stimulus it in no wise improves in its action, but lazily lies within the pelvis a soft and flaccid bag, its fibres relaxed, and its vessels left unligated and patent. There is a gush of blood from the vulva, and, unless intelligent and efficient aid is at once rendered, the uterus bellies out under the influence of its accumulation, within its cavity, and the manifold risks of post-partum hæmorrhage are at hand.

Uterine exhaustion gives us a state resembling this very closely, and yet is by no means an identical one. Here, the organ which, perhaps, for days, has been doing its duty with faithfulness and vigor, falls feeble and exhausted on the accomplishment of its task. The uterus in the first case resembles the "baulky" horse, the energies of which are unimpaired and undeveloped; in the second it may be likened to the wearied steed, the over-taxed powers of which have yielded to fatigue and prostration, after having been fully developed and employed.

The sudden evacuation of the contents of the uterus proves, I imagine, in the hands of beginners, a more fruitful source of uterine hæmorrhage than either of those just mentioned.

At the beginning of labor, the fundus uteri is at a point, midway between the umbilicus and ensiform cartilage; as the expulsion of the child proceeds, it slowly descends, inch by inch, until at the accomplishment of the process it forms above the symphisis a globular mass not larger than the fœtal head. Thus nature performs her work by gradual advances made with intervals of rest, in which the nervous energies of the organ have had time to rally and recuperate. Now the minutes which elapse after the birth of the head and precede that of the shoulders and body, are pregnant with anxiety and suspense for the inexperienced (and sometimes even the experienced) accoucheur. He sees that the uterine efforts have ceased, that the child is not breathing, and fearful lest his inactivity may permit its death, and often urged on by those who surround him, he passes his finger into the axilla next the perineum and speedily the body is drawn from (what was deemed) its position of danger.

A moment's reflection will show you how unreasonable, how rash, and how useless is such conduct. It is surely unreasonable to expect uterine efforts, which have been coming on every four or five minutes, to come on now in one, merely to relieve our groundless fears; unreasonable likewise to expect that the uterus will, at a moment's warning, and contrary to the requirements of nature, suddenly contract from a point near the umbilicus to one near the symphysis pubis; it is surely rash thus suddenly to withdraw from a cavity the body which has stimulated it to action, and by its distending force, prevented the separation of the placenta, and it is useless to deliver, at such risks, a child which is, as a rule, in no way endangered by a delay instituted by nature herself.

The organ, bereft of the stimulus given by the body of the child, and suddenly transformed from a contracting wall into an empty bag, seems staggered by the boldness which would improve upon the workings of nature, and before its contractility has returned, the gaping sluices which the partial separation of the placenta has exposed, give forth a fearful flow.

I desire to speak particularly of this cause of hæmorrhage, because I know, how much fortitude it requires in a beginner to repel the advice of lookers on, and overcoming his own anxiety, to allow nature to finish the task for which she is so much more competent than he.

Adherent placenta, or rather adhesion of a part of the placenta, is a prolific and dangerous cause of hæmorrhage. If the whole mass is detached, and the uterus contracts upon it no flow occurs ; for the necessary ligation is applied to the vessels, and if the adhesion is entire no hæmorrhage takes place, because the utero-placental canals are unbroken. But if partial and firm adhesion exists, the most terrible flooding may arise, the blood escaping either from the uterine surface or by passing into the attached portion of the placenta, and out of the free ; the organ being at the same time interfered with in its contraction by the "splint," as Dr. Meigs styles it, which mechanically separates its approaching walls.

Distention by imprisoned blood may likewise prevent contraction, and produce hæmorrhage of so insidious and stealthy a nature that intimation of its occurrence, may be given only by the evidences of approaching dissolution. This may be due either to the fixation of the placenta over the os or in the vagina, preventing discharge ; or from clots of blood forming there, or again (as I saw only a few months ago), from the gross ignorance of a practitioner in applying a tampon.

When thus distended by fluid or clotted blood, the best efforts of the uterus are frustrated, and though its contraction be powerful, they meet with defeat from the resisting mass against which they act.

Mental emotion is a well known cause of suspension of uterine action, during the parturient process. A strange physician, a nurse who was not expected, or an unwelcome guest, enters the room, and pains previously vigorous and frequent, vanish entirely. In the same way the advent of zealous but injudicious friends, just after labor, whose congratulations serve but to harass and excite the already exhausted woman, tends much to prevent the proper condition of the sensitive and impressible organ, upon the vigorous action of which safety depends. In the more refined walks of life, this will rarely prove a cause of hæmorrhage, but among the lower classes it is not an infrequent one.

An excited state of the circulation undoubtedly predisposes to hæmorrhage post-partum, as has been emphatically stated by Gooch, Prof. Michælis of Kiel, and others. This acts probably not so much by causing the flow in spite of the contracted condi-

tion of the uterus, as by disordering such contraction and rendering it imperfect.

Means for preventing post-partum hæmorrhage.—The successful ship's surgeon is not he who cures scurvy, but he who in a long voyage prevents its appearance; the army surgeon who treats with good results the camp fever, is not deserving of the palm, but he who protects from its ravages those entrusted to his care; and the accoucheur who meets with courage, skill, and efficiency, the appalling accident of post-partum hæmorrhage, is less deserving of our admiration and the confidence of his patients, than he who avoids the danger by careful and judicious means. Do not imagine that I am straining at this parallelism, for all who have had experience in the lying-in room, will assure you that it is a just one, and the statistics already adduced, will of themselves, I believe, incline you to give credence to their statement.

If I have succeeded in convincing you that the frequency with which you will meet with post-partum hæmorrhage, one of the most disagreeable of all the accidents of the lying-in room, will be very much governed by your uniform observance of precautionary measures, I will be quite sure of your attention to the following rules which I will arrange collectively, and analyze as we proceed.

RULES.

1st. After delivery of the head, let the body be expelled by the uterine efforts; never pull the child out by the shoulders, unless absolutely forced to do so.

2d. Let the hand of an assistant firmly compress the uterus and follow the child down in its birth.

3d. After the birth of the child, let the uterus be *constantly* held in the hand until the bandage is applied.

4th. Never, under any circumstances, apply the bandage until the placenta is delivered.

5th. If the placenta is detached, remove it within 20 minutes.

6th. Avoid stimulants during and after delivery.

7th. Never leave the *lying-in chamber* for one hour after delivery.

8th. Before leaving the house, always apply the child to the breast.

9th. Enjoin perfect quiet and exclusion of visitors.

10th. If there is reason to anticipate hæmorrhage, give ergot as the head is passing the perineum.

Now all these rules are acknowledged as expedient, and the propriety of their universal application no one will deny, and yet who is not aware that many practitioners are in the constant habit of neglecting some or all of them? Analyze them and they appear small, unimportant and even insignificant, but compare the risk of hæmorrhage attending the practice of one who observes, and that of one who neglects them! One who, for example, as soon as the head has been delivered for a minute, or at most two,

despairs of a pain and helps the body out without one ; then leaving the uterus uncompressed (as I have so often seen done), at once applies the bandage and perhaps retires to an adjoining room, there to await with becoming dignity his recall by the nurse, who informs him that the secundines have been expelled. Or, again, one who, after the expulsion of the placenta, leaves the application of the bandage to the nurse and retires from the room. It strikes me that such an one is much more likely than his more cautious *confrère*, to be paralyzed by the cry from the nurse that the patient has fainted and is bleeding to death.

Of the first rule, I have, I hope, already said enough, to have impressed upon you its great importance.

The second and third are surely of a value which cannot be overestimated, and the practitioner who has lost a patient by post-partum hemorrhage, without having availed himself of their rich results, should feel that he has recklessly disregarded one of the most precious preventive (and curative) means of which the obstetric art is possessed. Should the non-contracted condition of the uterus be due to inertia, uterine exhaustion, sudden evacuation of contents, or some strong mental emotion, this pressure will mechanically produce a diminution in the size of the organ, stimulate the flagging fibres to their task, and at least, by pressing the opposite walls against each other, thus plug the bleeding mouths until a vital effort can be effected. Should the placenta be adherent, or should it have fallen like a valve over the os and caused the uterus to fill with blood, this firm and steady force will often expel its contents and incite the emptied organ at once to become hard and contracted. It constitutes also the best method of removing the detached placenta, and gives to the hand effecting it, the constant assurance that all is as it should be. For it to prove all this, however, it should be done properly ; the organ is not to be flattened by pressing it backwards against the spine, but the wrist should be pressed down, until it rest if possible on the spinal column above the fundus, which will thus come into the palm, the fingers being extended towards the symphisis ; the whole organ will thus be grasped and the force should be directed towards the vulva as if we were attempting to produce inversion, which however will never occur from it.

The bandage should never be applied before the delivery of the placenta, for these reasons. 1st, It becomes saturated with blood, which has collected on the bed, and with that which accompanies the expulsion of the placenta. 2d, It prevents our fulfilling the second and third rules, and prevents our recognizing the dilatation of the uterus. 3rd, Its application annoys the exhausted patient, just when she needs rest most, and 4th, it is very little value in itself as a preventive of harm. It is a dangerous error to suppose that the bandage prevents hæmorrhage. If applied very firmly, and with a compress above as well as on the uterus, it certainly aids in keeping up its contraction, but the main purpose

subserved by it, is the support given to the large vessels on the spinal column, pressure upon which has been suddenly removed, rendering their increased capacity dangerous to the sanguineous supply to the brain. In the wards of Paul Dubois at Paris, I never saw a bandage used, and yet hæmorrhage is as rare there as elsewhere.

If the placenta is detached, remove it within 20 *minutes*, for if the uterus does not contract upon it in this time, we know that the stimulus of its presence, so well pointed out by Dr. Murphy, has been overcome by tolerance, established in the organ, and as long as it remains the organ cannot perfectly contract; while at the same time, there is danger of its acting as a tampon. Its removal should be accomplished by the gentlest means; if in the uterus, by firm pressure after the method mentioned above, and if in the vagina, by traction upon the cord.

Should these means fail, the rules applicable to the treatment of "retained placenta" must be followed. I am convinced, however, that if through practice you follow the second and third rules here given, you will very rarely meet with retention of the placenta.

Avoid stimulants during and after labor, unless as sometimes occurs, syncope or extreme debility call for them. They increase the force of the heart's action, render the patient restless and uncomfortable, and produce a condition of excitement just the contrary of what we desire, and one which predisposes to hæmorrhage.

Never leave the lying-in chamber for one hour after delivery, for a large majority of cases of hæmorrhage occur within this period, and the majority of these within half an hour, during which the placenta is undelivered. By being present, we are able to grapple with the complication at its very beginning, and when the patient's strength is unimpaired by loss of blood. During the 20 minutes in which the placenta is undelivered, the accoucheur cannot better employ his time, than by sitting at the bedside of his patient and keeping the uterus in his grasp, while the nurse attends to the child, and thus during the period most fraught with danger, he is as secure as forethought and caution can make him. It may be objected that his presence in the room for an hour will annoy and inconvenience the delivered woman, but this is not so. Every woman at this time, never mind how often she has been in labor before, feels a sense of impending danger, and so far from the presence of her physician inconveniencing her, it gives her a feeling of security and renders her composed and quiet. If detected in its very commencement and met with efficiency and intelligence, post-partum hæmorrhage is generally controllable, but if the loss must continue, until an uneducated nurse (are nurses in America ever otherwise?) is impressed with the necessity of calling the attendant, if only from the next room, the phase of the matter is changed.

Before leaving the house, always apply the child to the breast, unless the mother does not intend to nurse it, for by exciting the nerves distributed there, we exert a reflex influence on the uterus, of a most salutary kind. So marked is the sympathy between these organs, that Scanzoni has recommended irritation of the mammæ to produce abortion, and of late the application of a child to the nipples has been strongly advised as a mean of spurring on the inefficient pains of tedious labor. Many excellent observers and writers, state it among the means even for checking hæmorrhage, and so highly is it esteemed by the celebrated obstetrician Dr. Rigby, that he uses concerning it the following language: "When every means has failed to induce a sufficient or permanent degree of contraction, we believe that the only certain means which remains is putting the child to its mother's breast. Under no circumstances do we see the sympathy between uterus and breast so beautifully displayed as here, and we most truly affirm, that we have never known it fail, where the mother was sufficiently conscious to know that it was her own child;" and again he says, "In no way can we ensure our patient so completely against this kind of danger, as by putting the child to the breast, uterine contraction which it excites is not only powerful, but permanent, nor do we consider that a practitioner is justified in leaving a patient in whom the uterus has shown a disposition to inertia without having ensured her safety by this simple and efficient safeguard."

Dr. Marshall Hall accorded fully in this view. Now we are never sure, when leaving the lying-in chamber an hour or even two hours after delivery, that hæmorrhage will not occur, and suppose that it did and that we could not be found. The results would be terrible indeed, in all probability. Who can think it right then to neglect so simple and so accessible a means of safety, when recommended in such terms, and by such men? Always, then, and in every case, observe and fulfill this eighth rule. No harm can arise from it, and that much good may, you are told by excellent authorities—upon one point, however, let me guard you, put the child to the breast yourself or see it done; nurses are frequently prejudiced against early suckling, and if you simply leave an order with them, the strong probability is that it will never be obeyed.

Enjoin perfect rest and exclusion of visitors, unless you wish to work for evil upon the already hyperæsthetic nervous system of your patient, and produce a corresponding depression of nerve power. And not only this, but the simple act of sitting up in bed, performed in a moment of forgetfulness, may be sufficient to produce fatal syncope. By the latter of the two injunctions contained in this rule, you also avoid many chances of mental emotions of various kinds, which could only exert a deleterious influence upon your patient. The propriety of the tenth rule which I have given you, no one will dispute. The patient having in previous

deliveries suffered from hæmorrhage, or having had an extremely lingering and exhausting labor, we naturally resort to some means which will, before delivery, cause a firm and sufficient contraction, and ergot is the only medicine which secures us this. There is, however, this precaution to be observed in giving it; namely, beware that it is not given before the perineum has yielded, and inflict a rupture upon it by the constancy and violence of the efforts which it excites. When we have good reason for the anticipation of post-partum hæmorrhage, of course we unite with this, all the other precautionary means mentioned, and as additional ones of much utility, I may mention the application of cold to the fundus uteri, and the administration of an enema of ice cold water, at the same time that the ergot is administered.

I have remarked that practitioners who have never lost nor seen lost, a case by puerperal hæmorrhage, are very apt to conclude that its dangers are much exaggerated and that death is an infrequent result of it. Let such inform themselves on this point, by reference to the excellent tables embodying the experience of the "Royal Maternity Charity," London, compiled by the Drs. Ramsbotham, and given in the appendix of "Ramsbotham System of Obstetrics." They will there learn "that of the 162 deaths from puerperal causes, 66 were from hæmorrhage, either immediate or remote," and that of those attacked by this accident, a little over 10 per cent. died. No compromise for carelessness and no comfort for voluntary ignorance can be gleaned, then, in this direction.

Let me, in concluding, gentlemen, advise you strongly to follow the first nine of the rules given here, in every case which you may attend; believe me that if you do so, in the beginning of your professional lives you will never depart from the habit, and I assure you, that you will find, that by taking these trifling precautions, your labors as obstetricians will be bereft of much of their burthen of responsibility and anxiety, by a feeling of security and confidence.

Like a single strand of a cable, any one of these rules separated from its neighbors is weak and unreliable, but the whole combined will give you a power which nothing but the united force of a combination of unfortunate circumstances will break. And who is there who would not take tenfold the trouble which is attendant upon their observance, if it added one iota to his chances for escaping that stunning calamity, the loss of a healthy and robust woman, in the most interesting hour of her existence.

CLINICAL REPORTS.

NEW YORK PATHOLOGICAL SOCIETY.

REGULAR MEETING OCT. 26.—DR. DALTON, *President.*

Reported for the New York Journal of Medicine.

BY GEORGE F. SHRADY, M.D.

Diseased Knee-Joints.—Dr. Bauer presented two specimens of disease of knee-joint. The history of the first is as follows :

A healthy boy, about fourteen years of age, was struck with a stone against the shin, immediately below the knee joint ; intense periostitis ensued, which was neglected ; the result of all which, was the specimen presented. Around the seat of injury the periosteum was entirely destroyed, and peeled off from the bone. There were two perforations of the joint ; one was exceedingly interesting, viz., through the cartilage of the head of the tibia ; the other being behind the right condyle of the femur. There were also manifest frightful changes, appertaining to the presence of matter in the joint, the cavity being filled, and the surrounding tissues infiltrated, with a gelatinous mass. The disease was irreparable, and amputation was found necessary, the child's general health becoming very much enfeebled. In consequence of the extensive injury to the soft parts, it was necessary to amputate high up.

In relation to the second case, Dr. B. remarked that it was one of great pathological interest. The history of the case, said he, is of a somewhat lengthy nature ; I will, however, give it an outline :

A somewhat enfeebled tailor was admitted a patient in the Long Island College Hospital. All that he presented pathologically, was the remains of erysipelas of the face ; he had no fever ; in fact he seemed to be free from any constitutional disturbance, yet he would become delirious, at times violently so, besides having a considerable tremor of the muscles. In a word, all the peculiarities of delirium tremens presented themselves, but the person being one of known temperate habits entirely excluded that diagnosis. The next most likely affection it was thought to be, was uræmic poison ; the urine was accordingly examined. There was found a moderate quantity of albumen, besides some casts which clearly showed a diphtheritic degeneration of the medullary substance of the organ. He was treated accordingly, and the delerium left him in thirty-six hours. His recovery proceeded to a certain extent, when suddenly his knee-joint was filled with

matter. Up to that time, the man was getting along well enough, and it was exceedingly difficult to find out the cause of the trouble.

He suffered from no pulmonary pain or uneasiness, and, even when the joint became filled with matter, he did not complain. This collection of matter must have formed very rapidly, as I saw him within ten or twelve hours of its occurrence, and he did not give the slightest indication of trouble in that locality. The matter was twice removed by a trocar, without any difficulty occurring, or inflammation supervening.

Soon after he became very decidedly enfeebled; his skin became very pallid; in fact, presented all the characteristic appearances of a person with a superabundance of white corpuscles. His blood was examined, and more than fifty per cent. of white corpuscles existed. This remained throughout the rest of the disease (he died of course).

On post-mortem examination, we found, besides degeneration of the kidney, and some disease of the lungs, this condition of the knee-joint. I need not state that the disease of the knee-joint went on. I have never heard of such a case, where the white corpuscles existed in such abundance. The blood was first taken from the affected leg, the seat of disease, and where there appeared such an abundance of white corpuscles; it was thought to be due to the presence of pus, when it was taken from a different part of the body. The destruction of the joint will be seen to be very considerable and extensive; the cartillage is all gone, and the synovial membrane, for the most part, also.

Retroversio Uteri caused by an Abscess—Perforation of the Rectum—Peritonitis—Death.—Dr. Bauer next presented specimens consisting of the rectum, womb, bladder, and a portion of the small intestine, which were removed from a woman who had been in a delicate state of health for a long time; still she was able to get about and do her house-work. She suffered from trouble of the womb, to remedy which she applied to a physician who made a correct diagnosis, pronouncing it to be retroversion.

An attempt was made by the physician to put the organ in place, and, if I understood her rightly, the finger was introduced into the anus, another into the vagina, and the basis of the organ was tried to be raised. The operation was exceedingly painful to her, so much so, that she desired to be left alone, unrelieved. She went home and was attacked with a very violent peritonitis; the treatment which was instituted proved of no avail, and she died six weeks afterwards.

We found on post-mortem examination, an abscess immediately in front of the basis of the womb, which seems to have pressed the organ constantly down. How long this collection of matter existed, we are, of course, unable to say, but from the great changes that have taken place in the surrounding parts, we infer that it must have been a good while, as is usual with these abscesses. The rectum was perforated, and pus was discharged in

considerable quantity from it. This state of things showed itself during my treatment of the case, and the peculiar character of the stools led to a microscopical examination of the matter, when, by the presence of such an amount of pus globules, the existence of an abscess was clearly made out, and the tumor, which was detected immediately behind the bladder and to the right side, was supposed to be its seat. The lower wall of this abscess is the posterior wall of the bladder, and the anterior wall of the uterus, the basis of the organ, and the anterior wall of the rectum. Above, the abscess was closed by the small intestines which were closely and firmly agglutinated by plastic material—so firmly, indeed, that the patient was able to pass nothing but matter from the rectum, for the last four weeks of her life. All efforts to relieve her in this particular were fruitless.

He exhibited portions of intestines, in order to demonstrate how extensive and serious was the damage done by the exudation; at one point the opposite sides were adherent to each other.

He was not certain of the cause of the trouble; he thought it possible, however, that it might be due to the presence of tubercles, as a mass of that material was found attached to a portion of intestine, and also a few tubercles were found scattered in other places over the peritoneum.

Perigoff's and Syme's Stumps.—Dr. Bauer exhibited three casts of stumps, one of which was the result of Syme's operation, and the other two of Perigoff's. The latter he was indebted to the kindness of Prof. Pancoast, of Philadelphia, for the opportunity of exhibiting. He only wished to compare the results of the two operations. In regard to the usefulness of the stump, he thought that one answered as well a purpose as the other, with the exception that Perigoff's operation leaves the limb longer, and in consequence of the increased bulk at the extremity, mechanical appliances could not be as well made as in Syme's stump. This, he said, was the opinion of those who were in the habit of making such apparatus.

Caput Femoris Removed for Morbus Coxæ.—Dr. Sayre presented a specimen of the head of a femur, which he removed from a little child about eleven years old. The operation was performed on last Thursday. The child had been suffering from the disease for four years, and, not being in the hands of a regular practitioner, nothing was attempted for his relief. I saw him for the first time on last Saturday a week, and found him extremely enfeebled, and attenuated to the very last degree, pulse one hundred and sixty-five, lying on his back, with legs drawn up very much, one at an angle of sixty degrees. A portion of the trochanter major was denuded. In addition to all this, there existed four or five abscesses in the vicinity, which freely communicated with the hip-joint.

After a consultation, it was resolved to attempt the removal of the head of the bone. The patient was put under the influence of

chloroform, and a careful examination made. The head of the bone was found to be denuded, and gave the sensation of grating against bare bone, but from the very peculiar position assumed by the limb, it was doubtful to his mind whether the acetabulum might not be perforated; but, not being able to examine it to his satisfaction, he was unable to make up his mind definitely in relation to the point. After the delay of a few days, in order to try, if possible, to get up the strength of the patient, the operation was performed, as the only chance left for saving his life.

On removing the head of the bone, he found it fastened through an opening into the acetabulum, and, on withdrawing it, a large quantity of green colored, fœtid pus escaped. The opening into the acetabulum corresponded in size and shape exactly with the portion of bone that occupied it, so that it formed a complete plug to prevent the escape of the confined matter; as far as the finger, passed through this opening, could reach, it was found that the internal surface of the ilium ischium and pubis was denuded of periosteum, and evidently in a state of caries.

The periosteum, being peeled off from the surface of these bones formed a cavity or bag for containing the pus. All the carious portions were removed by the bone-forceps, leaving almost nothing behind but the wing of the ilium. During all this operation, the periosteum and peritoneum were not interfered with, and formed the only partition between the pelvic cavity and the external world. This was done on Thursday, and the pulse, previously to the operation, was one hundred and sixty, when the child was asleep. The chloroform was administered, while he was in that state, so that the child did not wake up till after the operation. Dr. Jones superintended the administration of the anæsthetic, and too much credit could not be given for the manner in which it was done.

The evening following the operation, the pulse fell to one hundred and twenty, and remained so till the Sunday following, when it had decreased to one hundred and twelve. The patient was dressed for the first time, that day, and presented a very favorable appearance. The wound was nicely washed and injected, and the doctor began to entertain strong hopes of recovery. Since that time the patient has been going on tolerably well, and notwithstanding everything was done for the little fellow, in the way of nourishment, he feared he had not vitality left to repair the damages.

The doctor explained the perforation of the acetabulum, by referring to the fact that, eight months before the operation, the patient had fallen from the bed and struck upon the trochanter of that side. The head of the bone, being thus driven through, peeled off the periosteum, and formed the pocket for the pus.

Dr. Bauer remarked that the case was not a fair one for operation, that its performance was with the view only of allowing a free exit of matter, and rendering the last hours of existence

more tolerable. He had watched the case carefully, and was satisfied that the patient was far more comfortable after the operation, than he had been during the eight months before. He maintained that the operation in the case referred to demonstrated the fact that it could be performed with benefit to the patient, not only when the head of the femur was involved, but also the acetabulum. He stated that the number of operations for hip-disease has reached the handsome number of ninety-two, and almost *fifty per cent.* recovered. Very little blood was lost; hardly more than half an ounce at any time. In eight cases, he had no occasion whatever to ligate an artery. In Dr. Sayer's case, one small vessel was tied, and this would not even have been required, were it not for the extreme feebleness of the child.

The question presented itself in his mind, in that connection, how it came that abscesses and large deposits of purulent matter could remain, and be manufactured in the body for months, and not produce that disease denominated pyæmia. He thought it was time to take up the matter and study it more closely, especially as the latest work on surgery had revived all the old doctrines in relation to that form of disease, notwithstanding many of the theories had been exploded twenty-five years ago.

Regular Meeting, November 10.

Encysted Tumors in the Peritoneal Cavity.—Dr. Alonzo Clark presented two small *tumors*, for the sake of explaining their nature. He was not aware that these tumors had been reported upon by anybody.

One of them was found attached to the small intestines, and partly imbedded in the fat that covered it, so much so, that it could not be very easily turned out. Whether it has any connection to the intestines by vessels, cannot be ascertained in its present condition. It is about the size of a bean, but a little more globular, and does not seem to have provoked any irritation whatever. Here is another of the same character obtained a few days ago by Dr. Burgess. Dr. B. remarked, that in making the post-mortem, he picked it out of the peritoneal cavity, and that it had no connection with anything. These tumors are both of the same nature. Their constitution is simple enough, and entirely harmless. Each one of them has a cyst, that seems to have been a portion of the growth, and for that reason it seems as if there must have been some vessel connected with it.

The first tumor consists principally of oily matter. In the tumor that was found detached in the peritoneal cavity, the contents were found to be partly fatty, partly oily; they must have been fluid, at the ordinary temperature of the body, but are now solid. Under the miscroscope, the contents of the tumor presented that stellate crystallization peculiar to fatty matter. The older of the two specimens is a little more complex in its compo-

sition, but probably had a similar origin. It contains some oil, but is made up principally of cholesterin ; it also contains some triple phosphates, a very common deposit in old structures. It also contained some material which was at first supposed to be epithelial, which it was thought might have been formed by the friction of the parietal peritoneum, in such a manner as to roll up a mass of epithelium upon the growth, but on further examination it was found that it was not epithelial, but the remains of the cysts of adipose material. These specimens, then, are nothing but encysted fatty tumors developed in the peritoneal cavity.

Perineal Stricture of the Urethra—Pelvic Abscess—Atrophy, with Calcific Degeneration of the Kidney.—Dr. Markoe presented a bladder and kidneys, with ureters attached, which were taken from a patient, forty-six years of age, who was operated upon at the New York Hospital, for perineal stricture, about one month ago. The patient was very carefully examined, but no gonorrhœal antecedents could be traced. He stated, that when a young lad about fifteen years of age, he had suffered from some difficulty about his water-works, attended with stoppage of the urine, and associated with the occasional passage of gravel, the exact quantity of which could not be ascertained. From that period he was never entirely free from some obstruction in the passage of his urine. As he grew up to the age of manhood he presented more distinct symptoms of stricture, but never required the introduction of an instrument but once. So he went on for nine years, without suffering very severely until about a year ago, when he presented himself to us. At that time there was an abscess forming, which broke ; shortly afterward two secondary abscesses were formed in the perinal region. These rendered his life so exceedingly uncomfortable, that he was induced to apply for an operation. On examination the patient was found to be a man of tolerably good health and presented no evidence of any diseased condition of the urinary organs which led us to suspect the existence of any such organic disease as was afterwards found.

He was operated upon in the usual way by dividing the stricture. The operation was apparently as successful as in any case. For eight days after the operation the patient appeared to be perfectly well, and the case in every respect a promising one. The instrument was removed four days after the operation, after which it was introduced three or four times, with a view of keeping the passage open. At the end of eight days he was attacked with chills, pain in the perinæum, attended with fever, which led to the suspicion of the presence of unhealthy suppuration. The disease advanced very rapidly. Four days afterward, low fever, with muttering delirium set in and he died.

On *post-mortem examination* a pelvic abscess was found, which had formed about the neck of the bladder, running behind the pubis, the walls of the abscess being covered with a detritus,

looking almost like a slough. The abscess had opened into the cut which had been made by the operation. The walls of the bladder were thickened and contracted. The right kidney was found to be exceedingly enlarged, and somewhat congested; otherwise it was healthy in structure. It weighed about twelve ounces, and the ureter belonging to it was dilated.

The *left* kidney has undergone a peculiar change indeed. In fact it has disappeared almost entirely, and there is in its place an irregular bony body about two inches and a half long, an inch wide, and little less than an inch thick. Within this bony encasement there was found a peculiar tarry fluid, of a reddish color. The bony encasement was not complete, but nearly so; it occupies about three-quarters of the mass. The rest is made up of a fatty material, which perhaps might represent the remaining portion of the structure of the kidney. The case, then, presents a striking instance of a most complete and thorough destructive process, the degeneration having taken the shape of calcific deposit, the structure of the kidney being destroyed, and the suprarenal capsule being converted into cholesterine. The ureter on that side was entirely obliterated; no instrument could be passed through it.

This case seemed to point to a very advanced condition of atrophy, and it is an interesting question whether this condition might not have dated back to his early life, at the age of fifteen, when he had what he called an attack of gravel, and perhaps the process was not completed until the time of his death, 31 years afterward.

REGULAR MEETING, November 23d.

Wound in Fœtus.—Dr. Finnell presented one of the lower extremities of a fœtus, with an interesting wound just below the knee-joint. The wound was more of a penetrating than of an incised character, passing completely through the fleshy portion of the limb, and separating the fibula from its epiphysis.

The mother of this child, when in about the eighth month of gestation, received a stab in a scuffle, inflicted just below the umbilicus. A week after this time she was delivered, and had a natural labor. The child, however, was born dead, and by the physician was handed to the attendants and laid aside without further examination. The next day, when making his visit, his attention was called to this wound on the child's leg.

The point of interest in this case is to determine whether this wound was inflicted while the child was alive in the uterus of the mother. There are some circumstances which favor the view that the wound was accidentally inflicted on the still-born child after birth; f. i. the fact that the other limb was not injured in the least, while it can hardly be conceived how, in its doubled up position in utero, it and other parts could escape the injury, if it was really done by the stab; also the absence of any blood mix-

ed with the liquor amnii, which the attending physician stated to to have presented nothing unusual. It is to be supposed that a wound of this kind, inflicted on the fœtus in utero, would give rise to a bloody appearance of the amniotic fluid. Again, the wound was perfectly free from any evidences of reparative or inflammatory action.

Other circumstances, however, favored an opposite view. It was noticed that directly after the woman was stabbed, there was a gush of water, followed by blood. This would seem as if the wound had penetrated the uterus, and a certain amount of the liquor amnii was discharged at the time of the injury. Again, the woman did not feel any movements whatever after the injury had been inflicted. The mother recovered completely, and suffered very little from the injury. How deep the wound penetrated was not known. At first it was presumed to go only through the integument. But the discovery of the wound on the child after birth, taken in connection with the escape of water at the time when the mother was stabbed, let to a contrary opinion. With what kind of instrument the stab had been inflicted was not known, as it could not be found.

Dr. Dalton inquired whether it was a head presentation?

Dr. Finnell stated that he had been so informed by the attending physician.

Dr. Dalton then remarked, that in a head presentation, if the limb of the fœtus, at the time of the stab, happened to press up against the side of the uterus, and the wall of the uterus being pressed against the abdomen, and the abdominal parietes themselves being tense, it did not appear impossible to him that a sharp, penetrating knife, might pass into the uterus and wound the fœtus. Hence there seemed to be good reason that the child was wounded at the time.

Foreign Body in the Air Passages for Six Years.—Dr. Clark presented part of a chestnut shell, covered on the inner surface with a little incrustation of calcareous matter, the anterior surface being quite natural, with the exception that it is slightly covered by a whitish deposit. It was coughed up by a gentleman on Friday last.

When Dr. Clark saw him four years ago, to examine him whether he had tubercular disease, the patient stated that two years previously, while eating chestnuts and cracking them with his teeth, he was suddenly seized with an impulse to sneeze. He took a full inspiration, with a chestnut shell in his mouth. Immediately after he had the conviction that something went down his throat, and he was attacked with a cough, which lasted for some time, but finally ceased to oppress him very much.

When Dr. Clark saw him, on examination no evidences of tubercular disease were found. The only noticeable feature in the case was, that the breathing in the right lung was not near so forcible as in the left, and the respiratory murmur was feeble.

About a year after this time he was attacked with a severe bronchitis. Dr. Wood then took charge of him. During the course of the disease the chest was repeatedly examined, and the unequal respiration still being present, and no probability of its being caused by a morbid deposit, the conviction remained that the chestnut shell was still there. He recovered from his bronchitis, and has not had any severe illness since. His general health remained very good, he retained his appetite and spirits, and looked entirely healthy. His appearance, as much as the physical examination, enabled Dr. Clark to exclude the element of tubercles from his case.

On Friday morning, while coughing as much as usual, he coughed three or four times, and raised a little mucus ; then, with a cough not more violent than the others, he raised this portion of the chestnut, covered with a semi-transparent mucus. Its shape has been very little altered. When first removed it had very nearly the shape as it would when coming from the shell. A maceration of six years does not seem to have altered it materially. From Friday until to-day he does not know that his cough has been materially diminished. Undoubtedly the foreign substance has left behind an irritation which will remain for some time.

Aneurism of Aorta.—Dr. Clark next presented larynx, trachea, portion of the bronchial tubes, larger division of the bronchi, together with the heart and the aorta, on the inferior surface of which there is an aneurism.

The specimen was obtained from a man 33 years of age. He was received into Bellevue Hospital ten days before his death. When he was admitted into the hospital the prominent symptom was difficulty of breathing. On examining the lungs with considerable care, as far as this could be done on the back (the front could not be examined for reasons to be stated below), respiration appeared unequal on the two sides. He was supposed, from the history that was given, to be suffering from tubercular disease. The evidence of tubercles, however, could not be positively recognized from the examination made. The patient stated that he had syphilis. The first idea which Dr. Clark had of the case was that the patient was suffering from laryngismus, produced by a certain amount of irritation, which had its origin either in tuberculosis or a syphilitic ulcer in the larynx. After a more careful examination, the former cause was excluded. Shortly after he had the same difficulty in inspiration as in expiration. This convined Dr. Clark that there was no œdema glottidis. In this condition the patient continued for ten days, sometimes worse, sometimes better, during which time it was almost impossible to examine him in front, for the very moment he was put upon his back he was taken with a paroxysm of dyspnœa, which seemed almost to threaten his life. His easiest position was on his side, leaning a little forward ; that position he kept

night and day. He could not be raised in bed without producing a paroxysm that seemed to be dangerous, and every attempt to speak brought on the difficulty of breathing. Convinced that this difficulty was in the larynx, direction was given to the house physician that the patient should be closely watched, and if the symptoms should increase so as to threaten life, to call for the surgeon's assistance and have the trachea opened immediately. Nothing occurred, however, until yesterday morning at about four o'clock, when the house physician was called to him by a very unalarming message, namely, that the patient was not breathing as easily as natural. He found him absolutely blue, and the breath nearly out of him. Having no time to send for assistance, he opened the trachea and inserted a quill until the proper tube could be sent for. Immediately after the operation the breathing became easier, and continued so for six hours, when he sank, apparently from the shock of the dyspnœa which had occurred before the trachea had been opened.

On making the autopsy to-day nothing was found in the larynx that could be regarded as an important disease. There was no effusion, no ulceration, but the vocal cords appeared to be somewhat strained.

Over the trachea, however, the aneurism here presented was found, and over the aneurism the branches of the recurrent nerve going to the larynx could be traced. It seemed, then, as if the whole disease was a chronic spasm of the larynx, producing such a condition that the air was not allowed to pass through the aperture of the glottis, causing suffocation, for which the trachea was opened.

The aneurism is in a somewhat rare position, being situated on the inferior curve of the artery. The branches are given off from the arch as usual. There would have been no difficulty of making a diagnosis in this case, if we had only been able to get the patient in such a position that we might examine the heart. There is very little doubt that this aneurism would have produced both the thrill and dullness. Not thinking, however, of aneurism, no attention was called to it.

Dr. Clark remarked, that this was the second case of the kind that had fallen under his notice, where aneurism had been overlooked, and its symptoms ascribed to other causes.

Dr. Markoe remarked, that he performed the operation of tracheotomy in cases where it was known that the dispnœa resulted from aneurism, because it relieved those symptoms of difficulty of breathing produced by the pressure of the tumor.

Dr. W. Parker observed, that in these cases the patients do not bear to be placed in a straight position, but most always incline the head and neck forward.

Phosphor-Necrosis.—Dr. Markoe presented two specimens removed from the same patient, illustrating phosphor-necrosis of the jaw, a disease which was now attracting a great deal of

attention, and the pathological anatomy of which differed in a considerable number of points from that of necrosis, occurring under ordinary circumstances. While under other circumstances necrosis produces suppuration on the outside, the separation of the dead bone and the formation of an involucrum, here a totally different circumstance occurs. Instead of the separation of a sequestrum, we find the surrounding parts secreting bone immediately around the dead portion. The dead bone becomes incrusted with a pumic-stone-like material, which adheres very firmly to the bone, so much so that it can hardly be separated from it. These two specimens illustrate very beautifully this variety of disease. They were taken from a man who labored in a match factory. He had a tooth extracted, and at that point the mischief commenced. At the end of five months he was subjected to an operation, and a portion of the jaw removed. The wound healed up, and shortly afterward he went back to the factory. The disease then attacked the other side of the jaw, and this was removed, and also a portion of the upper jaw.

The unfortunate feature of these cases is, that this pumice-stone exudation represents a reparative attempt, or rather it represents what would be accomplished, if the dead bone were taken away. In that case the periosteum would secrete new bone, which would replace the old bone. But when this pumice-stone exudation takes place, there is no reproduction of the bone. In this case, it is now eighteen months since the operation, and there is no formation of new bone tissue. The upper jaw appeared to be simply necrosed. There was none of this exudation, or at least so little, that it was not noticed.

The patient is doing well, and although both halves of the lower jaw and one side of the upper jaw have been removed, his face is very shapely.

Dr. Sayer inquired whether the rule was a general one, that in these cases of removal of the jaw for phosphor-necrosis, no attempts at new bony formation took place afterward. He thought quite the contrary was the case, and remarked that Dr. Wood, who had perhaps more experience on this subject than any other man in the country, in one case removed both upper jaws, when the bones grew in again, and the patient had placed upon them a set of artificial teeth. He would defy any one to detect that the jaws had been removed in that patient, so complete was the deception. He hoped that Dr. Wood would favor the Society with some remarks on this subject.

Dr. Wood did not desire the Society to go into a discussion of this matter now. He would, however, on some future evening, bring some beautiful specimens, showing perfect reparation in cases where the bone had been destroyed by phosphorus. He would suggest that Drs. Markoe and Parker also bring their specimens, and then the Society could go into a general discussion of the subject.

Disease of Elbow-Joint—Resection. — Dr. Wood presented the bones composing the elbow-joint, which were exsected, a short time since, from a man about thirty years of age. He stated that a year previous he had suffered considerably from imflammation about the joint. This continued until what is called white swelling, or *fungus articuli*, occurred. His general health suffered so much that he finally concluded to submit to an operation. He was therefore sent to the hospital, and the operation of resection performed, and the whole of the joint completely removed. The wound was dressed in the usual way, and the patient is now doing well. This is the fourth time that Dr. Wood has performed the operation. Two of the cases occurred in hospital practice, one of which was followed by amputation. The other two occurred in private practice, and were followed by good results, the patients having a very fair amount of motion—rotation nearly as well as before the operation.

In all these operations Dr. W. has removed only the condyles of the humerus, with the upper portions of the ulna and radius. In performing the operation, Dr. Wood cuts directly through the olecranon, so as to fairly open into the joint, and removes the ulna in two pieces. This renders the operation much more easy than by dividing the triceps above its insertion in the olecranon. In performing the operation in this way, Dr. W. has exposed the ulnar nerve in but one instance. The fibrous tissue and periosteum is then fairly cleaned from the bone, and in this way the nerve can be avoided.

Neuromatous Tumor.—Dr. Parker presented a tumor removed a few days since from the arm of a young man by Dr. Briddon. It appeared to a neuromatous tumor. It was situated on the inside of the upper arm on the right side. From the symptoms produced it was supposed to be connected with the ulnar nerve. It is about three inches long, and of variable thickness. The nerve passed to it above, and from it below. When the tumor was pressed upon, pain was felt in the little fingers, and the inner half of the ring-finger. The tumor was of rather slow growth, being about seven years since it was first noticed. On microscopical examination, Dr. W. H. Draper found it to be of the structure peculiar to these tumors, described by Dr. Smith in his work on tumors.

Tumor of Lower Jaw.—Dr. Parker presented another tumor, removed from the under jaw of a man about 38 years of age, some few days ago. The patient was a farmer, of good constitution, with no hereditary tendency. When first discovered, the tumor was on the under jaw, and did not appear to have any connection with the teeth, but seemed to spring from just below the teeth. After a time the teeth became loose, and some of the cuspidati were removed. The tumor then began to press outward, and involved all the alveolar margin of the outer surface of the under jaw. The patient, however, was able to bring the molar teeth together, and masticate tolerably well. In the renoval of this tumor the rule was followed which should be observed in all

these cases, to remove the diseased mass entirely, but leave as much as possible of the jaw. The tumor belongs to the epithelio-fibroid structure.

Complicated Fracture.—Dr. Sayer presented the leg and foot of a man 38 years of age, of rather delicate and feeble constitution. Five years ago he had suffered from an attack of fever, since which time he has been in very feeble health. On the 28th of September last, he received a fracture of the fibula, about three inches above the ankle-joint. It was supposed at the time to be a simple fracture, and was so treated, there being not much contusion at the seat of the fracture. Forty-eight hours after the accident an abscess formed about the seat of the injury, and the patient was seized with typhoid symptoms. It was deemed proper to remove the limb.

On examination of the leg after amputation, it was found that the ankle-joint was nearly destroyed. The fracture of the fibula was not simple, as was supposed, but the lower fragment was the seat of a fissure, which penetrated into the joint. The fracture then was a complicated one, communicating with the joint. The question arose whether in this case the result would not have been better, had exsection of the lower fragment of the fibula been performed, by which a chance would have been given for the exit of matter.

Vegetations on the Mitral Valves—Uterus after Delivery.—Dr. Finnell presented the *uterus* and *heart* of a large fat woman, forty years of age.

Some fifteen years ago she suffered from a very severe attack of rheumatism; since that time she has had more or less pain and palpitation about the heart. On Sunday, a week ago, she was taken in labor with her eighth child. The labor progressed very slowly. The pains, after some few hours, having passed away, the gentleman in attendance thought it proper to use the forceps, and accomplished delivery. The patient went on very comfortably until the eighth day after confinement; on that day she went to bed about eight o'clock in the evening. When her husband came home, he went to her bed and found her, as he supposed asleep, with the child lying on her arm. He went out and returned in a few hours, and found her in the same position —dead.

On post-mortem examination, a small amount of vegetation upon the free margin of the mitral valve was found. No lesion of any other valve was present. The pericardium contained about three ounces of fluid.

The *uterus* was presented in order to show its appearance one week after delivery. At the mouth of the uterus there are two lacerations, one large enough to admit of the passage of the finger. There is a very distinct corpus luteum on the ovary of the left side.

NEW YORK HOSPITAL.

Reported for the New York Journal of Medicine.

BY GEORGE F. SHRADY, M.D.,
LATE RESIDENT SURGEON.

Hydrocele, its treatment.—Following out the original plan of these reports, the generalization of facts connected with the practice of the Hospital, I propose in this article to refer to the treatment of hydrocele. This disease is well known to be a very common one, and, consequently, a great many afflicted with it are admitted into the institution. The majority are also permanently cured, which is a success that is not remarkable, as compared with results elsewhere, but the means used are a little peculiar with one or two of the surgeons, and it is for this reason more particularly, that I introduce the subject at all.

The surgeons, for the most part, rely upon the use of injections of either iodine or Lugol's solution, as recommended by Velpeau, and though it cannot be said that every case is a success, still the results, taking everything into account, are good.

Drs. Watson and Parker, however, prefer other modes, which I shall proceed to notice.

First, of Dr. Watson's method. This consists in the introduction of a stilet and canula into the sac, allowing the latter instrument to remain a sufficiently long time to excite a certain degree of inflammation, in which case he maintains that the success is complete. I cannot illustrate the efficacy of this treatment better than by a reference to one or two cases, which, as far as the cure of the hydrocele was concerned, may be considered to be the type of quite a number.

Dr. W. was first led to adopt the treatment alluded to, by the procedure of a private patient of his, who had suffered for a considerable length of time from an accumulation in the tunica vaginalis. He was in the habit of tapping himself, whenever the amount was sufficient to render such an operation necessary. Finding this in the course of time, a very undesirable state of things, and withal a very annoying piece of practice upon himself, inasmuch as the fluid accumulated very quickly, and as often rendered it necessary to puncture the scrotum, he bethought himself to establish a permanent opening, by means of a small wire. This having been done, he kept the foreign body in that situation for several days, the effect of which was to produce a great deal of inflammatory induration of the whole scrotum. In this state, he presented himself to Dr. W., who, from the appearances presented, the amount of induration, etc., was inclined to the belief, that it might possibly be a malignant growth. But in the course of a few days, the swelling all disappeared by the use of the ordinary means, and the sac shrunk to its former size. The man died

several years afterwards, and opening into the cavity of the tunic of the formerly affected side, and comparing it with its fellow cavity, no difference in appearanae could be detected, demonstrating conclusively that the result was a perfect cure.

The next case was that of a lad 18 or 19 years of age, suffering from hydrocele, which was of very long duration, having been previously under the care of several surgeons. The sac was injected with some of the preparations of iodine quite a number of times, and acupuncturation was as often resorted to. As the last resource, with the view of effecting a permanent cure, the following operation was performed.

A delicate trocar and canula (about one-half line in diameter) was introduced into the sac, and the stiletto withdrawn, and the canula was left remaining for the space of thirty-six to forty-eight hours, the patient, of course, all this time being in a recumbent posture. During the first twenty-four hours, there dropped from the free end of the tube nothing but serum, which, in the course of twenty-four hours, became opaque—sero-purulent in character. The canula was then withdrawn, and by the judicious use of local cooling applications, the inflammatory process was kept to a certain extent under control, and the parts in due time returned to their normal calibre, and the patient was cured.

The doctor maintains, that to render this mode of treatment efficacious, the tube must be left in the cavity of the tunic until such time as the fluid which exudes becomes opaque and purulent in character. The inflammation consequent upon this he has never seen so severe, that it could not be controlled by the ordinary local antiphlogistic remedies.

The next most favorite mode of treatment with the doctor, is by acupuncturation, as recommended by Mr. Keate, of London ; this generally answers very well in ordinary cases. The scarification of the tunic is, according to his experience, attended with less good results. This last plan of treatment I have only seen employed by Dr. Van Buren, and then the operation had to be performed several times before any gain upon the disease was noticed. The instrument used in this case, was a sharp-pointed probe. There seems to be one insurmountable objection to this plan, on account of the intense pain that is sometimes occasioned, causing, in some cases, actual syncope.

In regard to the injection of stimulating substances, Dr. Watson has not much of any faith in it as a reliable remedy, not having employed it in three cases in twenty years.

Dr. Parker's plan is to lay open the scrotum to the extent of an inch or more, evacuate the fluid by these means, and then introduce into the cavity a wedge of lint, or pour in with a spoon a greater or less quantity of the tr. of iodine or Lugol's solution, diluted one-half. Inflammation of the whole cavity is induced, granulations shoot out, and the opening is filled up from the bottom as an ordinary ulcer. Another plan of his, is to make an

opening in the usual way, by the trocar, and introduce a probe whose blunt end is coated over with nit. of silver. This is swept around in contact with the serous surface in every direction. The same end in both of these cases is aimed at, by inflammation of the tunica vaginalis.

These, then, are the mere statement of facts in connection with the treatment of this very common affection, and it is to be hoped that the means more particularly referred to, may be found to be useful in some of those cases which resist all the ordinary remedies laid down in the books. Great care, of course, should be taken in such cases, to guard against any undue amount of inflammation.

Dr. Parker, during his term of service, performed the operation of ligature of the subclavian, and also removed two tumors of the jaw.

Ligature of the subclavian.—Inasmuch as such an operation is rather a rare one, I shall give it somewhat in detail, availing myself of Dr. Bell's notes of the case.

Jas. Fisher, age 32, a native of Ireland, was admitted, December 5, 1859, and gave in substance the following history. Little over nine weeks before, while at sea, in attempting to step from the main-tack to the water-cask, fell a distance of — feet upon the deck, striking upon his right shoulder. There was not much swelling of the parts until next day, when he experienced a throbbing pain in the axilla, extending down his arm into the hand. In the course of a day or two after, his attention was called to the existence of a circumscribed tumor in the axilla, but he did not notice particularly whether it pulsated. Three weeks after the injury the patient arrived in port, from which time until his admission, he had been under the care of several doctors, who diagnosticated the injury to be *sprain*, and treated it as such, in the meanwhile the swelling becoming more and more marked.

The throbbing pain which the patient experienced to a greater or less extent since the accident, was markedly increased three or four days before admission after exerting himself in attempting to lift a bucket of water, but he did not notice any corresponding increase in the tumor. From that time the pain in the parts continued to be quite severe.

On examination after admission, the patient's right arm was noticed to hang awkwardly by his side, having but slight power of motion in it. The hand and arm of that side was lower in temperature than on the other—innervation was somewhat impaired. The shoulder was somewhat elevated and presented an ill defined pulsating tumor, or rather fullness which extended throughout the axillary region. The pulsation was distinctly felt and seen, and on auscultation a distinct *bruit* was detected throughout the whole tumor. No pulsation in the tracheal or arteries in the forearm. Pressure over the subclavian at its inner third arrested the pulsation and *bruit* in the tumor. Pulsation in the radial artery detected only occasionally and then with difficulty.

The operation was performed by Dr. Parker on the 13th. An inverted T incision was made over the clavicle, and after cutting through the integument and platysma myoides muscle, the outer margin of the scalenus muscle was brought into view and traced to its point of attachment in the tubercle of the first rib—and immediately external to this the artery was ligated. The lips of the wound were brought in good apposition and retained by a suture and adhesive plaster. The arm was then wrapt in cotton and bandaged from the fingers upwards.

The day after the operation, the patient had some heat of skin and quite a severe headache which seemed to have been caused by the ether. Pulse 96 and feeble. Strong coffee was ordered with the view of alleviating the difficulty.

On the morning of the day following (December 15th), patient suffered from a severe rigor which was followed by fever and profuse sweating. Quinine was administered in two grain doses every three or four hours. Pulse 100, quick and feeble, complained of much nausea—tongue foul and considerable headache. Milk punch administered freely.

During the afternoon of the 16th, patient had another chill which was followed as before by fever and sweating ; was restless and complained of much pain in head and shoulder. Pulse 96. An anodyne was administered in the evening.

On the 17th the patient had two chills and was seized with delirium which lasted through the whole of the following night, when on the morning of the 17th, he was seized with an attack of vomiting and died in the act.

The post-mortem examination was made by Dr. Fisher, ten hours after death. A circumscribed false aneurism was found to exist in the situation of the tumor, which was found to communicate with the artery a short distance external to the ligature by a small opening. The walls of the sac were ill defined and formed by the pectoralis major, coraco-brachialis and extending under the axilla to be bounded posteriorly by the scapula. The contents of the sac were for the most part fluid. There was no suppuration about the wound, it having healed in the greater part of its extent by first intention. All the organs of the body were found to be healthy, but the blood was in a fluid state, of a dark color, and seemingly decomposed.

Of the operations upon the jaw—one was for phosphoric disease, the other for fibroid tumor.

Removal of Entire Lower-Jaw and part of Upper.—This patient, a German, a workman in a match-factory, twenty-seven years of age, was first operated upon by Dr. Parker, about a year ago, when one-half of the lower-jaw of the right side was removed for phosphoric necrosis. The disease first made its appearance after the extraction of a molar tooth upon that side. After the operation, the patient did very well, the parts healed up nicely in the course of a few months, when the patient being all this time away from the factory, was induced to return to work. Soon after this

the same disease commenced to show itself in the remaining one-half of the lower-jaw and to a small extent in the upper-jaw of the same side. The remaining portion of the lower-jaw was removed with a portion of the upper, during the last three weeks.

It may be interesting here to state that there has been no attempt on the part of nature to form any bone-matter in place of that removed at the first operation, notwithstanding the periosteum was left with that view; this is a result contrary to that obtained by other surgeons, Dr. James R. Wood in particular, and is deserving of notice at this time inasmuch as a great deal is being said of the bone-producing power of the periosteum. The portions of bone removed were covered more or less completely with the pumice-like material described by Stanley, and Dr. Markoe is inclined to the belief that this new material takes the place of the new bone which would have formed under other circumstances. Dr. James R. Wood who has operated upon a number of similar cases, has had very good results as far as the formation of new bone was concerned, but whether this pumice-stone material existed in any of them, I am unable to say.

The second case of tumor removed by Dr. Parker was from the under-jaw of a man twenty-eight years of age, a farmer by occupation.

About seven years ago he first discovered a small irregular shaped tumor at the roots of the incisor teeth—as the mass gradually increased in size, these teeth, together with the cuspidati, were crowded out, and the bony substance of the jaw was absorbed—but instead of the mass rising above the margin of the bicuspid on either side, it pushed itself out anteriorly, causing the under lip to bulge out—the whole giving the appearance of a protruded and hypertrophied tongue—that organ, however, could be seen posterior to the tumor.

The operation was performed in such a way as to leave the inferior margin of the jaw remaining. The tumor seemed to have originated unlike epulis, from the outer surface of the bone, from the cellular structure at the root of the teeth. Examined by the microscope, it was found to be fibro-plastic in character. The patient is now doing well.

BROOKLYN CITY HOSPITAL.

Reported for the New York Journal of Medicine.

BY GEO. K. SMITH, M.D.,

HOUSE SURGEON.

Attempted Suicide.—Separation of os hyoides from thyroid cartilage.—Recovery.

Henry H., æt. 35, a cooper, had been employed at his trade for

some years, in the Navy Yard of this city. For a few weeks past, he appears to have been laboring under a partial derangement of mind.

At 11 A. M. on the 28th of July, he sharpened his drawing-knife, and deliberately drew it, from one end to the other, across his throat, completely separating the os hyoides from the thyroid cartilage, and penetrating almost to the posterior wall of the pharynx. The hemorrhage was considerable. The epiglottis could be plainly seen, and was found to be divided, or split *vertically*, throughout almost its whole extent; the patient was admitted, one hour after the injury. The attending surgeon, Dr. Isaacs, being present, examined the wound, and ligated a large thyroid vein, from which a copious hemorrhage proceeded. He then passed a gum-elastic tube into the stomach, and poured through it, into the stomach, a pint of beef tea and two ounces of whisky. He then withdrew the tube, and united the divided edges of the skin, with interrupted sutures, leaving a large opening in the centre of the wound, for the free escape of fluids. Adhesive strips were also employed. No effort was made to unite, or bring together the edges of the thyroid cartilage and os hyoides. The head was inclined gently forwards, the chin towards the sternum, but no bandages, or other mechanical means were used to keep it in this position. Ordered beef tea ʒv., and whisky ʒi., every three hours, *per rectum*.

July 29th.—Quite comfortable, complained only of thirst; continued treatment; ice to hold in the mouth. July 30th.—The house surgeon attempted to introduce the stomach pump, but did not succeed in getting it past the wound. July 31st.—Dr. Isaacs succeeded in introducing the stomach tube, and poured down a pint of beef tea, and ʒii. of whisky. August 1st.—We were unable to introduce the stomach tube, and the attempt to do so caused so much irritation to the parts, that we never tried it afterwards.

Aug. 14th.—Since the last date, the patient has had no unfavorable symptoms, and is slowly improving. It is now 17 days since the injury, and during this time the patient has lived on beef tea and whisky *per rectum*, with the exception, that on the third day they were given by the stomach, through the stomach tube.

To-day he finds, that as the ice melts in his mouth, the water runs down the œsophagus, and quenches his thirst.

Aug. 15th.—Patient can swallow a little beef tea, taking it into the mouth, and allowing it to run down the œsophagus, and without much effort. The wound is granulating finely; his voice is a hoarse, rough whisper.

Aug. 20th.—Can swallow beef tea very well; also bread, soaked in milk or beef tea.

Sept. 1st.—Patient is rapidly improving; wound is filling up by granulation.

Oct. 1st.—The voice is much stronger, and the wound is nearly closed up.

Nov. 8th.—Discharged—*cured.* His voice is still hoarse, but is growing stronger and clearer.

Remarks by Dr. Isaacs.—I have seen the patient since the above account was written ; the voice has much improved ; the power of swallowing is nearly, or quite perfect.

Obliteration of Vein by injection of per-chloride of iron.

John Brady, æt. 50, native of Ireland, seaman, was admitted on the 22d of August, 1859, on account of a varicose ulcer of the leg, of six weeks' duration. It was of an oval shape, 3 by 4 inches in extent. The internal saphena vein is enormously distended, from the ulcer up to the saphenous opening in the fascia lata, being more than half an inch in diameter all along the thigh, and plainly visible throughout its whole extent, while the patient is in the standing position.

August 27th.—Dr. Isaacs injected ʒss. of the Liquor Ferri. Persulphat (Squibb's) into the saphena vein, just above the knee-joint, the vein having been first closed by pressure with the fingers of assistants at a point about two inches above and the same distance below the place of introduction of the canula of the syringe into the vein. A firm clot was immediately formed in the whole extent of vein between the two points of pressure ; at these points a compress and bandage were applied for a few hours.

August 28th.—The clot, formed by the persulphate of iron, is firm and hard. There is no constitutional disturbance.

August 30th.—A slight discharge from the puncture, and place of injection ; some slight ulceration and discharge from this point. Sept. 4th.—Two or three portions of the clot came away upon the poultice, one of which was ¾ of an inch long, and ¼ of an inch in diameter. Sept. 8th.—The discharge has ceased ; at the locality of the operation there is a hard lump, showing that the clot has not yet come away. The patient is able to walk out doors, and feels no inconvenience, except a slight stiffness about the inner hamstring tendons.

Sept. 20th.—Some inflammation at the seat of puncture of the vein, and an abscess formed, which broke on the 25th of September, discharging about ʒi. of dark colored fluid, containing partially dissolved clots. The ulcer improved rapidly after the operation, and on the 20th of September, was nearly well.

Oct. 15th.—A slight discharge has continued ever since the abscess broke. Oct. 22d.—Discharged, cured.

Remarks by Dr. Isaacs.—In this case, as the result of the operation, a portion of vein more than six inches in extent was obliterated. The quantity of per-sulphate injected was perhaps greater than necessary, producing more inflammation, and a larger clot, than was desirable. A smaller quantity, and somewhat diluted, would probably have accomplished the obliteration of the vein, without the occurrence of ulceration, and discharge of the clot, which might then have been absorbed.

PART SECOND.

CRITICAL ANALYSIS.

The Diagnosis, Pathology, and Treatment of Diseases of the Chest. By W. W. GERHARD, M.D., Physician to the Pennsylvania Hospital. Fourth Edition, Revised and Enlarged. Philadelphia: J. B. Lippincott & Co., 1860, pp. 448.

THE present edition of this work has been enlarged by the addition of about one hundred pages of new matter, the sections on pneumonia, pulmonary consumption, other diseases of the heart being chiefly extended.

Of these additions the practitioner will be particularly interested in the author's views of the value of cod liver oil in phthisis. While he admits that it is a valuable remedy, he states that he has never met a case in which the physical signs have entirely disappeared under its use. On the contrary, in many cases, although the general symptoms improve markedly, the local signs prove the persistence of the disease, and occasionally show that it is progressing. He inclines to the opinion that cod liver oil is most useful in hereditary phthisis, and in those cases he recommends that it be used rather as food than medicine.

He gives the following as the result of the use of this remedy in the Pennsylvania Hospital:

1. *Of the oil.* That the light-colored oil can be taken without difficulty by patients whose stomachs have steadily rejected the brown oil.

2. *Of the mode of administration.* That a few of the patients have taken the oil without any adjunct to disguise its taste. That its nauseating properties are corrected by its administration with milk; but that its taste is most effectually disguised by the froth of porter.

3. *Of the time of its administration.* As a general rule it has been taken before meals, but in four instances where it was not tolerated before meals it was readily taken after meals.

4. *Of diarrhœa as a contra-indication to its use.* The existence of diarrhœa is not a positive contra-indication to its use. In three instances in which patients were thus affected, no increase of the symptoms was produced by its use, and no diminution by its abandonment. In a fourth instance, where the diarrhœa had previously existed, the discharge appeared to be increased by the exhibition of the oil, and abated with its withdrawal.

5. *Of its effects in cases of phthisis pulmonalis.* Patients using the oil have increase in flesh, in weight, and strength, while using

the oil their cough and expectoration have diminished; that with some hectic and rigors have entirely disappeared. Six of them have been so much benefited as to leave the hospital and resume their former occupations.

6. *Of the physical signs.* The improvement of the physical signs is not coincident with that of the general symptoms.

7. *Of its use in general scrofula.* In scrofulous diseases where there was no reason to suspect the existence of pulmonary tubercles, the improvement of the patient's health has been very decided.

Dr. Gerhard believes that the number of cases of phthisis have increased within the last four years, and this increase he inclines to attribute to the prolongation of the cases treated by cod liver oil.

In regard to the virtues of the phosphates of iron, soda, lime, and potash, as recommended by Dr. Churchill, Dr. G. is in doubt. He occasionally uses them in the following formula: sodæ phosphat., ʒiv.; calcis phosphat., ʒii.; potassæ phasphat., ʒi.; ferri phosphat., ℈ii.; aq. rosæ, ℥vi.—M. S. A teaspoonful after breakfast and dinner, first shaking the bottle.

The portion of the work treating of diseases of the heart has been carefully revised and is a good clinical guide. The work as a whole is too well known to need our commendation.

Proceedings and Debates of the Third National Quarantine and Sanitary Convention, held in the city of New York, April 27, 28, 29, 30, 1859. Board of Councilmen, Sept. 19, 1859. Document No. 9. New York: 1859. pp. 728.

The friends of sanitary reform in this country are placed under infinite obligations to the Common Council of New York for its generous publication of the voluminous proceedings of the Quarantine and Sanitary Convention held in this city. With a munificence of which we may justly be proud our municipal authorities have issued a large edition of these proceedings, which in mechanical execution will compare favorably with the publications of our best houses. An abstract of the proceedings of the third Quarantine and Sanitary Convention has already appeared in this journal, from which our readers must have learned the nature of the subjects discussed and the conclusions at which the convention arrived. In the volume before us the discussions appear in a greatly amplified form, members having taken the liberty not only of correcting the verbatim reports, but in several instances of greatly extending their original remarks and even introducing new topics. We can scarcely consider this course just in the publication of a free discussion, as it is very liable to place parties in a false relation to each other. One instance of this kind has come to our knowledge in the present case.

The principal discussion grew out of the question of the contagiousness of yellow fever, and of its local or imported origin.

Solitary and alone among the medical members of the convention the veteran Dr. Francis stood forth the advocate of contagion and importation. With a cultivated mind early directed to the solution of the difficult problems which this disease presents, personally familiar with every epidemic of yellow fever which has occurred in this city since 1791, and with a comprehensive, yet critical knowledge of the entire literature of the subject, no person is more competent in the discussion of this question than Dr. Francis. In a brief and forcible speech, he reviewed the opinions of the early writers on yellow fever with the familiarity of a consise and accurate historian, and the critical acumen of a profound scholar. We would refer the reader to his remarks as containing one of the ablest reviews of the questions which have so long divided the medical profession, that has recently come to our knowledge.

Opposed to the doctrine of personal contagion was the mover of the resolution which brought the subject before the convention, Dr. Stevens, whose general knowledge of the subject as well as personal acquaintance with the epidemics of yellow fever in this city entitle his opinions to great weight; Dr. Harris, physician at the Quarantiue of New York during the severe epidemic of 1856; Dr. La Roche, of Philadelphia, the great historian of yellow fever, and others. This discussion will be read with interest by every one who has given attention to the subject. It presents in a proper light the various aspects of the questions to which yellow fever has given rise. We regret to add that this discussion also exhibits occasionally, the bitterness with which the advocates of various doctrines have treated their opponents. Especially are we pained to find the revised speech of a man occupying the position of Dr. La Roche, marred by ungenerous criticisms altogether unworthy of a scientific discussion. The courteous and deferential remarks of the venerable Dr. Francis, are thus commented upon by Dr. La Roche :—"He deals largely and boldly in bare assertions; he indulges occasionally in empty declamation; he appeals continually in statements of more or less doubtful accuracy, derived from old and long-exploded authorities, or modern writers of little or no professional weight. The whole of this, and much of like import he has woven together in a rambling, disjointed, and confused manner, which would put an insurmountable obstacle to my following the thread of his discourse with sufficient accuracy and precision as to enable me to frame anything like a brief, connected, and satisfactory answer." Such language, if uttered (?), was most unbecoming the occasion and the speaker, and now appearing in this permanent form, after having been carefully revised and matured, detracts greatly from the merits of his subsequent remarks.

The following are the reports which make up the body of the work :—A. *Report of the Committee on Quarantine*—I. A History of Quarantine (prepared by Wilson Jewell, M.D.). II. Have

Quarantines secured the object for which they were originally intended? If not, the reasons of their failure (prepared by Wilson Jewell, M.D.). III. What reforms are required to make Quarantines more efficient and less burdensome (prepared by Dr. Francis Condie, M.D.). IV. Is a uniform system of quarantine laws feasible? If so, to propose a plan by which the object may be accomplished (prepared by W. J. Wragg, M.D.).

B. *Report of the Committee on Internal Hygiene of Cities*—Introduction by Thomas Miller, M.D., Report on Disinfectants, by W. C. Van Bibber, M.D.

C. *Report on Sewerage, Water Supply and Offal*, by JOHN H. GRISCOM, M.D.

D. *Report on the Importance and Economy of Sanitary Measures to Cities*, by JOHN BELL, M.D.

E. *Draft of a Sanitary Code for Cities*, by HENRY G. CLARK, M.D.

As this work is to have a wide circulation, we shall not attempt to give an abstract of these reports. We commend the volume to all who are interested in Sanitary Science, and trust it will give such an impulse to the study of civic hygiene as to lead to the recognition by our American cities of a sanitary police as an integral portion of municipal governments.

The Lost and Found; or Life Among the Poor. By SAMUEL B. HALLIDAY. New York: Blakeman & Mason. 1859. pp. 356.

THE author of this work has long been connected with the "Home for the Friendless," a charitable institution of this city, devoted to the rescuing of vagrant children from the haunts of vice, and securing for them homes in the country. In the pursuit of the objects of his mission, Mr. Halliday was brought into daily famil iarity with the homes of the poor of our city, and their social and moral condition; with a mind well adapted to the investigation and stimulated by the generous and benevolent impulses which characterize the laborers in our charitable institutions, he has gradually accumulated a mass of facts relating to the poor of New York, which are of great value not only to those interested in its public and private charities, but equally to the citizen and taxpayer. There are chapters in this volume which we would fain have written upon the walls of our legislative halls that our lawmakers might constantly have to contemplate the sickening details until the proper remedy was applied.

In a report to the New York Sanitary Association on the domicils of New York, Mr. Halliday furnishes statistics showing the excessive crowding of tenement houses, and depicts in a most graphic manner the evils which flow from this source. It appears from this report that "in the different wards there are 2,998 dwellings, containing 33,838 families, or an average of 11 families of 50 persons; and a population of 152,371 souls in less than 3,000 dwellings. There are 580 dwellings containing 10,933 families,

or 19 families and 85 persons each; or about 50,000 souls in less than 600 houses. There are 193 dwellings containing 4,745 families, being an average of some 25 families and 111 persons to a house, and 21,397 souls in 193 dwellings. There were 71 houses which contained 2,235 families, an average of 31½ and 140 souls each; and a population of 10,057 souls in 71 dwellings. There was 29 houses containing 1,211 families, averaging 41¾ families and 187 souls each, or a total population of 5,449 persons in 29 houses. The average number of families per house throughout the city, was about three, and the number of persons fifteen."

The description which the author gives of the tenement houses of the city, their want of ventilation, the open sewers which surround them, the poisonous exhalations which the occupants must respire, will appear incredible to many a reader, and yet there is no exaggeration. The truth is given in language none too plain and direct. We can only hope that it may be read and pondered by thousands of our citizens, and this most potent of all evils—the wrong construction of tenement houses—may be remedied by proper legislation.

The section on the *Diseases and Mortality of New York* contains many interesting statistics which the author has collated. A table is given which contains, properly classified, the statistics of mortality of New York for fifty-two years, comprising the full period from January 1st, 1804, to December 31st, 1855. The total mortality was 416,796; of this number 139,284 were under two years of age. Of particular diseases, consumption gives the greatest mortality, 60,000; small pox numbered 7,712 victims; 28,000 were still-born. In a table showing the percentage of deaths of the whole population, in a single year, at successive periods of ten years, the humiliating fact appears that the mortality in this city has gradually increased from 1 in every 44½ of the population in 1810, to 1 in every 26⅓ of the population in 1855. Startling as this statement will be to many, we quite agree with the author that considering the domicils of our population, "the terrible general mortality of New York cannot, reasonably, be a matter of surprise."

The concluding section on intemperance, pauperism, vice, and crime, is replete with facts of vital interest to our community. From this we learn that four-fifths of the persons arrested by the police, are foreigners, and the cause of the offense was in the great majority of cases intemperance.

The author estimates the number of children in this city not in attendance upon school at from 20 to 60,000.

We cannot further pursue this subject but must refer the reader for further details to the work itself. We cannot close this notice, however, without expressing our sense of the obligations which the friends of our charitable institutions, the advocates of sanitary reform, and those citizens generally who are seeking to improve our municipal government, owe the author for the facts which he has collected and embodied with so much labor.

The Institutes of Medicine. By MARTYN PAINE, A.M., M.D., LL.D., Professor of the Institutes of Medicine and Materia Medica in the University of the City of New York, etc. Fifth Edition. New York: Harper & Brothers, Publishers, 1859, pp. 1109.

THE only additions to the fifth edition of Prof. Paine's great work is a supplement of about fourteen pages. In this the author treats of the *correlation of forces; the cause of the blood's fluidity; the modus operandi of remedies, etc., etc.*, and points out their bearing upon the doctrines which he has advocated in former editions. This work has been so thoroughly examined in this journal, that we have but to announce a new edition.

The Obstetric Catechism; containing two thousand three hundred and forty-seven questions and answers on Obstetics proper. By JOSEPH WARRINGTON, M.D. One hundred and fifty illustrations. Philadelphia: J. B. Lippincott & Co., 1860, pp. 445.

THIS work is addressed especially to the author's obstetric pupils, and is designed as a remembrance of their duties in the practice of their profession. It consists of a critical review in the form of questions and answers, of all the points of obstetrical practice.

Illustrations to How to work with the Microscope. By LIONEL BEALE, M.B., F.R.S., Prof. of Physiology in King's College, London. Containing upwards of 150 separate figures. London: John Churchill, 1859.

THIS work is designed to be an accompaniment of the author's work on the Microscope. It consists entirely of illustrations of the different kinds of microscope, and the practical uses of the various apparatus. The plates are so arranged that they may be taken out and inserted in the body of the preceding work.

Catalogue of the Alumni, Officers and Fellows of the College of Physicians and Surgeons in the City of New York, from A. D. 1807, *to A. D.* 1859. New York: 1859, pp. 66.

THIS elaborately prepared Catalogue is the production of Dr. Geo. H. Tucker, an alumnus of the College of Physicians and Surgeons, and a laborious statistician. It is the result of great labor under many and annoying embarrassments, and will long remain a monument to his industry. In completeness and accuracy, as far as we have examined it, this catalogue equals the best class of similar publications.

PART THIRD.

MEDICAL RETROSPECT.

Report on the Progress of Obstetrics and Diseases of Women. Prepared for the NEW YORK JOURNAL OF MEDICINE. By E. NOEGGERATH, M.D., Physician to the German (Canal Street) Dispensary.

I. PREGNANCY AND LABOR.

ESTERLE, C., *Prof. of Obstetrics in Trient, on Turning by External Manipulation.—Ann. Unniv.* April—No. 10.—(*Schmidt's Jahrbücher*, B. 104.)

The attention of Prof. Esterle was directed to the operation of turning the child by external manipulations partly by the authority of Wigand, Mattei, and Stoltz, partly by the frequent occurrence of spontaneous version during the latter months of pregnancy. All women who enter the Instituto D'elle Laste, are very accurately examined before being admitted, and so it was found that in the seventh to eighth month of pregnancy, a considerable number of children presented in a transverse position, and although formerly nothing was done to rectify this cross-position, most of the children presented with the vertex at the time of delivery.

In order to perform the operation of turning by external manipulations, the accoucheur must be thoroughly acquainted with the means by which nature effects spontaneous version, and with this view the following points are of importance ;

1. The constantly increasing dilatation of the lower section of the womb, by which the long diameter of the uterus gains over the lateral diameter, so that the growing fœtus is compelled to change its situation in order to adapt itself to the shape of the womb. This occurs very rarely before the seventh month of gestation.

2. The partial contractions of the womb, which set in very often long before beginning labor, and which by lateral pressure upon the most prominent points of the fœtal body, compel the latter to occupy the fundus uteri with one of its two extreme points (nates or head). In the great majority of instances, the cephalic end sinks downwards, because it was already placed lower down, a fact proven by the frequency of shoulder presentations, in cases of transverse presentations, and because the more moveable head is easier pushed downwards into the narrower space of the lower portion of the womb, than the less moveable nates.

3. The regular contractions of the uterus at beginning labor, do very often promote the rectification of a cross position.

4. The most efficient cause of spontaneous version, is the united action of the active movements of the fœtus and of its gravitation, inasmuch as the point of gravitation in the fœtus is situated if not in the head itself, at least near by it. To these conditions must be added a sufficient quantity of liquor amnii. This explanation is strengthened by the fact, that no spontaneous version occurs with dead children, except at the time of labor. Although it cannot be doubted that, in a large number of cases, the cross positions observed in the seventh or eighth month of gestation will be changed spontaneously into vertex presentations, it must be considered, on the other hand, that part of them remain unchanged even after labor has fully set in, thus requiring an operation, which is often painful, distressing, and dangerous for the mother, and more so for the child. This can be averted by a turning of the child *before labor has begun*, while this operation has another important advantage, viz., that of doing away with the danger of a premature confinement, which latter is often caused by a cross-presentation alone. The effect of the operation is moreover so void of all physical and moral suffering of the mother, that it ought to be performed at any time during the last three months of pregnancy, as soon as the accoucheur detects a transverse presentation.

The principal condition for the successful performance of turning by external manipulations is the possibility of an exact diagnosis of the position of the child in the latter months of gestation. In most cases *external examination alone* is sufficient to make out the position of the child. Both palpation and auscultation will seldom fail to give us positive results, while even in vertex or breech presentations, the internal exami ation is very often unreliable during the three last months of pr gnancy. Another advantage of external examinations is the fact that it is very seldom objected to by private patients, who would never allow an internal examination to be performed before beginning labor.

With regard to the manœuvre by which the operation ought to be performed, Dr. Esterle alludes to the rules laid down by Wigand and Mattei. He considers the proposition of the latter, viz., to change a breech into a vertex presentation, as unnecessary and dangerous. Nor does the author approve of the advice of those who recommend to change a cross-presentation always into that of the vertex, because in cases where nates are located nearer to the pelvic entrance, than the head, this operation is very difficult and almost impossible, while the turning on the breech is very easily performed, as the author himself had occasion to observe in a number of cases.

For the performance of the operation, the woman has to be placed in such a position, that the abdominal muscles become as much relaxed as possible. In its execution the proceeding of nature in spontaneous version must be followed. Thus the partial peripheric contractions of the womb, by which its lateral diameter

is diminished must be supplanted by lateral pressure, directed towards the fundus on one side, and towards the os on the other. The efficacy of these manipulations will be very much increased by gentle knocks applied alternately upon both ends of the ovum, by which their removal from the uterine wall, a greater mobility of the fœtus, and its presentation in the direction of the point of gravitation will be effected. These concussions may be performed after a while in quick succession, be it only upon the head, while the other hand maintains a constant pressure upon the opposite part of the fœtus, or on the breech and cephalic end at once in an opposite direction. The author asserts that by following these rules, he had often been enabled to bring the head to the pelvic entrance in a very short time, while pressure alone seemed to have, in many instances, very little effect.

Still the first attempt is not always successful. Great tenderness of the womb, excessive obesity, anasarca, want of liquor amnii, malformation of the bones, tumors, deformities of the fœtus may prove an obstacle to the successful performance of the operation. As soon as one or repeated manipulations have effected the desired rectification, it is necessary to maintain the fœtus in this position be it by an abdominal bandage, or by the posture of the woman.

But even after labor has begun, the operation may be attempted, especially as long as the membranes are not yet broken. Its performance is at this time more difficult to perform, but on the other hand we have the advantage of fixing the head after the turning by rupturing the amniotic bag. After the discharge of the water the operation has been successful only in very few instances.

The author's observations refer to five hundred pregnant woman, who were examined in the seventh or eighth month of pregnancy; among this number twenty-two transverse presentations were detected by external examination; in nine of these spotaneous version occurred, ten times turning by external manipulations was performed, twice cephalic version by a combined internal and external manipulation and only once the internal turning by the feet. In the ten cases, where the operation by external manipulation was performed, there was once placenta prævia, twice slight contraction of the pelvis, and three times excessive latero-version of the womb. Nine of these children were turned on the head, one on the nates. Of these ten women, nine went through a regular confinement, while one expects her delivery very soon. Three very interesting cases are reported. (We recommend a perusal of this article more paticularly to the *Members of the Scott County Medical Society, of Iowa.*—E. N.)

Larcher, *on the Normal Hypertrophy of the Heart during Pregnancy, and its Pathogenetic Influence.* (*Arch. Gen., March.*)

By an examination of 130 women, who died before or soon after

delivery, Dr. Larcher came to the conclusion that the heart was constantly hypertrophied during pregnancy. The women subjected to examination, were from 18 to 35 years of age, exhibiting, during life, the most different forms of temperament and constitution. The measures found on these occasions were compared with those of Laennec, designated as normal measures. This hypertrophy during gestation does only touch the left ventricle, which becomes $\frac{1}{4}$ to $\frac{2}{3}$ thicker, harder, and of a livelier color, while the other departments undergo no change. The consequence of this hypertrophy is an increased energy in the circulation of the blood, a cardiac souffle, and the possibility of sustaining two organisms. At times this hypertrophy is apt to produce pathological symptoms, calling forth or increasing disturbed functions of other organs. The author believes that the hypertrophy is owing to and connected with the physiological plethora of pregnant women. It does not disappear immediately after pregnancy, but continues for some time afterwards, supplying, perhaps, the breasts with the necessary amount of blood for the formation of milk. In some instances, this hypertrophy will prove a source of evil to the constitution, occasioning congestion and hemorrhages. If, for instance, pregnancies follow in quick succession, the hypertrophic condition of the heart may become permanent, and therefore anomalous. Other consequences are the pertinacity of the bronchitis in pregnant women, the greater fatality of pneumonia during gestation, inclination to hemorrhages from the nose, lungs and brain. Tuberculosis developed during pregnancy, takes from the same cause a more rapid course, it causing more particularly very violent hemorrhages.

Hoffmeyer, *on a Case of Eclampsia Parturientium.* (*Transactions of the Berlin Obstetrical Soc., Monatschrft. f. Geburtsk.*, B. xiii. H. 3. March.)

In the case reported by Dr. Hoffmeyer, an inconsiderable amount of albumen was found in the urine of the patient, before and during the time she was seized with convulsions, while the amount of urea was not lessened, but even *increased* during the single fits. No traces of albumen were found after the child was born. In the discussion following upon the reading of this paper, Drs. Martin and Wegscheider give an account of several cases of eclampsia, which had no connection whatever with albuminuria, or a diminished secretion of urea.

De Cristoforis, Mal., *the Resectio Pubica Subperiostea as a substitute for the more difficult Obstetric Operations.*—(*Ann. Univ.* Aug. to Sept. 1858; Genn., 1859.—*Schmidt's Jahrbücher.* B. 103. 8.)

After considering the several disadvantages connected with cæsarean section, symphysiotomy and pubiotomy, Dr. Cristoforis proposes a partial or total resectio subperiostea of the os pubis with the horizontal and descending rami. The total resection

consists in the removal of that portion of the pubic bone which is situated between both tubera ileo-pectinea and both tubera ischii. In this operation, the bone is enucleated from its periosteum, which is left to be filled afterwards with new osseous deposits. This, at least, is expected to happen in the female, as in the four experimental operations performed on dogs.

Prof. Kussmaul, *on Superfœtation and Superfecundation.—(Verh. des Naturhist. med. Ver. Zu Heidelberg* vi. p. 178.—*Schmidt's Jahrb.* 103. 8.)

Dr. Kussmaul remarks that superfecundation occurred if several ovula of the same period of ovulation were fecundated, in consequence of repeated connection. A superfetation would be established by the conception of an ovulum derived from a later period of ovulation, than that which was first fructified. But as it is not proven, at the present day, that ovulation continues after conception has taken place, therefore the possibility of a superfœtation even in utero duplici, is not probable. Nor are we in possession of one reliable observation of superfœtation in extra-uterine pregnancy. All the cases may be explained by a conception of two ovula of the same period of ovulation, or by a renewed conception after the death of the extra-uterine fœtus, and returned ovulation.

The strongest proof of superfœtation are those cases where full-grown twins have been born at a considerable distance of time; and of greatest importance are the observations reported by Eisenmann and Desgranges.

Billi, Fel., *Unusual twisting of the Funis, and its Cause.—(Ann. Univ. Febr.—Schmidt's Jahrb.* B. 103, 8.)

In the case reported by Dr. Billi, the funis of a still-born child was so much twisted around its long axis in the neighborhood of the navel, that it resembled in this place a thin cord. The cause of this twisting the author detected in an atrophy of the left side of the brain. He concluded that this was the cause of it from the well known experiment by which an animal is made to turn constantly towards one side, when a portion of the cerebellum of this side had been removed.

Cohen, H. M.—*Three Cases of Induction of Premature Confinement after my Method.—(Monatschrift f. Geburtsk.* B. xix. H. 3. Septemb.)

The three cases of premature confinement, published and performed by Mr. Cohen, after his method, are intended to answer the following questions: 1. Whether the introduction of a uterine sound, as proposed by Hamilton and Kiewisch, is preferable or not to intra-uterine injections? 2. Whether in cases of placenta prævia centralis, a premature labor induced in the seventh month of pregnancy is apt to bring on less violent hemorrhages during labor, than if the patient was allowed to go her full term. 3. Which

method had the preference in cases of constriction of the vagina and cervix from a previous instrumental labor.

In the first case published, Dr. Cohen introduced an elastic catheter as high as seven inches into the uterus, and left it there from 5 P. M., to 10 P. M., without observing the least influence upon the activity of the womb. He therefore withdrew the instrument and injected 275 grammes of tepid water. Immediately after this a decided contraction of the womb was established, and twenty-four hours later a living child was born. The premature confinement in this case, was performed with a view to check the progress of a violent endocarditis rheumatica, and the desired effect was most satisfactorily obtained. Added is the history of another instance of acute endocarditis, where the spontaneous entrance of labor in the sixth month of pregnancy, led to the same result. A coexisting Bright's disease of the kidneys was equally checked in its progress, and even ameliorated.

The second case was one, where premature confinement was induced in order to avoid craniotomy, which operation was performed for contracted pelvis in the first labor of this patient about eighteen months ago. The injections were followed by slight discharges of blood, and when the os was sufficiently dilated, the cause of this hemorrhage could be traced to a central insertion of the placenta. When the os was dilated to one and a half inches in diameter, the smaller flap of the placenta was separated from its adhesions with the womb. All the time very little blood was lost, although the feet presented. Dr. Cohen now ruptured the membranes and the child was born without any further hemorrhage, two days after the first injection. From this case the author thinks it advisable to induce premature labor in cases of dangerous hemorrhage during the seventh or eighth month of gestation, with a view to save the patient from more considerable loss of blood, before and at the time of natural labor at the full term.

The third case is reported to show that in cases of constriction of the vagina and deformities of the cervix, the dilatation by compressed sponge and colpeurynter was better adapted than those other methods: douche, injections, catheter, tapping of the membranes, electricity, which excite pains primitively in the cavity of the womb itself. For, although in this instance Cohen's method finally succeeded in effecting delivery, the pains were very slow, and labor so tedious, that the child died during parturition, and the author frankly confesses that in similar cases, the induction of labor by dilatation and irritation of the vagina, was the only justifiable proceeding.

Kauffmann, *on a Case of Abortion.* (*Monatsschrft f. Geburtsk.* B. xix., H. 3. Septemb.)

Dr. Kauffmann reports the history of an abortion, which he had attended, with fatal result, and asks the members of the Berlin Obstetrical Society whether it was right or not, to leave the en-

tire afterbirth of a three month fœtus in utero, in a case where it was impossible to remove the whole of it, or whether he ought to have taken away by force as much as could be got hold of in this instance, at a time where the patient was already very much reduced and exhausted by previous illness. Drs. Wegscheider and Martin think that it was the duty of the accoucheur to enter by force into the uterine cavity and remove the whole afterbirth by instruments, no matter what the condition of the patient was. Dr. Mayer on the contrary, believes that it was much safer to leave the entire afterbirth in utero, than to leave pieces of it in the organ, because in his opinion the whole of the placenta would be easier expelled by the uterus, and was not so liable to cause flooding and inflammation of the womb, than small torn particles of it.

KAUFFMANN, *on Circumvolution of the Cord as a cause of Dystocia.—(Monatsschrft f. Geburtsk.* B. xix., H. 3. Septemb.)

Dr. Kauffmann reported a case of retarded delivery, before the Berlin Obstetrical Society, where the birth of the child was prevented by the umbilical cord being twisted twice around the neck of the child, so that the forceps was resorted to, although the pains were all that could be desired. The remarkable feature in this case was the retrograde movement of the head, even before the pain was entirely over.

The value of this symptom for the diagnosis of the anomaly alluded to, was discussed by the members of the Society. While Drs. Martin and Hecker attached very little importance to it, inasmuch as irregular contractions of the womb would have the same effect upon the fœtal head, Drs. Paasch and Mayer consider it to be very valuable. Another sign mentioned by Dr. Kauffmann, is a slight inversion of a portion of the fundus uteri, corresponding with the insertion of the placenta, which occurs towards the close of every pain. This fact is confirmed by Dr. Paasch, who reported a case, where he was enabled by this symptom to recognize a circumvolution of the cord around the neck of the fœtus, before its head had freed the os externum.

FRANKENHAUSER, *on the Sounds of the Fœtal Heart with Regard to Diagnosis of the Life, Situation, Position, and Sex of the Child.—(Monatsschrift f. Geburtsk.* B. xiv., H. 3. Septemb.)

Dr. Frankenhäuser read a very interesting paper on this subject before the Berlin Obstetrical Society. The sounds of the fœtal heart are among the most reliable and important symptoms for the diagnosis of pregnancy, and of by far greater value than the so called placental souffle, although the latter may be perceived at an earlier time. For the diagnosis of double pregnancy the auscultation is less important than a thorough external diagnosis, for in many instances the sounds of the second fœtus are very

little or not at all perceptible, and, moreover, the frequency of the fœtal pulsations is so much varying, that auscultation performed by two experienced observers, will yield at one time a similar, at another time a dissimilar result, as it will be influenced by the movements of one or the other fœtus. For ascertaining the life of the child the sounds of the fœtal heart are invaluable, especially for an experienced accoucheur. After the author's experience, the cardiac sounds are perceptible in every case where the child is alive during the latter months of gestation, and their absence is a certain sign of the death of the fœtus. He, therefore, attaches more importance to the sounds of the fœtal heart, than is generally done. This point is of more particular importance for the decision, whether and what kind of operation ought to be performed. For detecting the situation of the child, the auscultation is of very little value. In transverse presentations, for instance, the fœtal sounds are not perceived in a line which runs across the abdomen; in breech presentations the sounds are perceived often, but not always above the level of the umbilicus. The position of the fœtus can be easily detected by the perception of the sounds on one or the other side. In a first cranial or breech presentation, they are perceived on the left side and *vice versa*. This symptom is particularly valuable, in those cases where a large caput succedaneum prevents a sufficiently correct diagnosis by the touch. The sex of the fœtus can be made out with a certain amount of certainty by counting the number of pulsations, it being smaller (124 on an average) in male, and larger (144 on an average) in female children.

During parturition, the examination of the fœtal sounds will enable us to judge about the condition of the fœtus. A diminution in the frequency is generally speaking a sign that the life of the child is threatened by some cause or other, especially if this diminution is of a constant and decided character, the more so when it is observed during the first stages of labor. A lasting decrease below eighty pulsations does always involve a great danger for the child, and thus it will be a guide for the choice of the time in a case where the use of the forceps is indicated. Of great importance is the frequency of the fœtal pulsations after the replacement of the cord, because this condition alone can decide about the presence of an internal incarceration. The modifications in the frequency of the fœtal sounds give us an account of the efficacy, or of the anomalies of the pains. Insufficient pains do not affect the pulsations, which point is of importance for their diagnosis; in spasmodic pains the decrease in the number continues even after the pain is over.

In the discussion upon the named subject, Drs. Koertge, Kauffmann, and Mayer, dissented from the speaker's opinion, that the impossibility of perceiving the fœtal sounds was a certain sign of death of the child.

II.—DISEASES OF WOMEN.

ANSELMIER.—*Constriction of the Vagina after the Use of the Actual Cautery in Diseases of the Womb.—(Gaz. des Hôp.* 70.)

Dr. Anselmier reports three cases in which considerable contractions of the vagina had remained after the application of the heated iron to the vaginal neck. In all of them, coition was difficult and painful. In one, the menstrual flood was retained in the uterus; in one it proved an obstacle to the natural delivery of the child. He effected a cure in all of the cases by incisions and dilatation of the vagina by a conical speculum.

NONAT, *on the Nervous Accidents which sometimes complicate Diseases of the Womb, and their Treatment by Transcurrent Cauterization.—(Allgem. Wien. Med. Zeitg.—Monatschrft f. Geburtsk.* xiv. 1. July.)

Dr. Nonat reports six cases in which he successfully applied superficial cauterizations with the ferrum candens for nervous, especially painful affections, connected with diseases of the womb. For the skin he makes use of a fine, thin, prismatic iron, which is heated white. Only very superficial stripes are burnt into the skin, which, destroying only the epidermis, do not leave any scars or permanent traces. The original affection of the womb, must of course be treated simultaneously.

MAYER, C.—*Extirpation of a Sarcoma Medullare from the Cavity of the Womb.*—(Transactions of the Berlin Obstetr. Soc. *Monatschrft f. Geburtsk.* B. xiii. H. 3. March.)

Dr. C. Mayer reported five cases of cancerous polypi, which had been developed in the cavity of the womb, and removed by the operation. All of the patients died some time afterwards, from a relapse of the disease. For opening the cavity of the womb, Dr. Mayer rejects the use of sponge-tents, which were insufficient in most instances. The best way was to wait for the protrusion of the tumor by activity of the womb itself, which might be properly promoted by the use of iron with ergot, the tampon (charpie with glycerin), and injections of a solution of hydroiodide of potassium.

COSTILHES, *on Chronic Granular Endometritis and its Treatment by Cauterization.—(Gaz.* Hebd. vi. 2.)

Dr. Costilhes published four cases of follicular or granular endometritis, which disease, he says, was not so frequently met with as was generally thought. During eighteen years he had seen this disease not once, while consecutive granulations, connected with chronic metritis, were of very frequent occurrence. The application of Recamier's curette, for the removal of these granulations, was not only very painful and difficult to perform,

but even connected with danger, and therefore objectionable. And even after the mechanical removal of the granulation, a sore place was left behind, which had to be treated afterwards with nitrate of silver. It is, therefore, more rational to begin at once with this latter remedy. For the diagnosis of the disease in question, Dr. Costilhes applies the speculum, and the sound, the introduction of which instrument is rendered difficult in case of granulations being present, while it is covered with a bloody mucus on being withdrawn. To remove this morbid condition of the mucous lining, the author very successfully applied the lunar caustic, which is introduced by an instrument, particularly constructed for this purpose.

Puech, A.—*Note on Hæmorrhages of the Fallopian Tubes.*—(Gaz. Hebd. January.)

Dr. Puech makes an interesting communication on hæmorrhages of the fallopian tubes. 1st. A married woman was attacked with small pox. When admitted into the hospital, she complained of acute pain in the lower part of the lumbar region, and towards the sacrum, although she had menstruated a fortnight before. She rolled about in bed screaming. Two days later, she was seized with profuse uterine hemorrhage, and died almost instantly. On examination, the uterus was found full of clots; the mucous membrane was quite healthy, except at the fundus, where it was thickened, violet, infiltrated with blood; at this point a clot remained, which stretched into the left fallopian tube. The tubes were of a violet aspect, of the size of the little finger, and filled with a large vermicular clot. There was not a drop of blood or serosity in the peritoneum. The right ovary presented no rupture, and had a clot the size of a small walnut on its outer surface. The left ovary, of the size of a hen's egg, was almost entirely converted into a sac containing a fatty matter and hairs. 2nd. A strong, robust woman, aged thirty-eight, was admitted on the third of July, 1858, and died ten days after, of meningeal hæmorrhage. The mucous membrane of the uterus was quite healthy; at the level of the left horn were some sanguinolent mucosities, resembling those contained in the inner half of the corresponding tube. The right tube contained a white opaque mucus; it was fixed to the anterior surface of the ovary; two or three serous cysts, the size of a pin's head, were on the oviduct; the mucous membrane near the fimbriæ was dull red, and pale elsewhere; the left tube was violet, as if ecchymosed, its outer third was as large as the index finger, the fimbriated end was widely open, and connected with the ovary by a tubular membrane continued from it, forming a complete canal to the ovary. This portion was dilated by sanguinolent mucosities, and on pressure, escaped from the uterine mouth of the tube; the mucous membrane was dark red, finely injected. There was no rupture of the ovary, but an apoplectic cavity in its substance. This the

author considers to be a case of tubal hæmorrhage, partly emptying itself into the uterus.

SENFTLEBEN, *Case of Septic Phlebitis.*—(*Transactions of the Berlin Obstetr. Soc. Monatschrft. f. Geburtsk.* xiii. 6. June.)

Dr. Senftleben exhibited before the Berlin Obstetrical Society a specimen of phlebitis in a young girl, which took its origin on the day on which a resection of the left elbow-joint had been performed for caries. The wound and surrounding parts were found in excellent condition, progressing favorably towards healing, the veins leading from this point being perfectly healthy. The disease most evidently took its origin from the sexual organs, the veins situated between bladder, vagina, and uterus, being all filled with purulent deposits, while the left ovary was considerably swollen, dark red, and very much inflamed. Metastatic abscesses were found in the lungs, spleen, and left kidney. In the discussion which followed, Dr. Virchow remarked that the foregoing case was very apt to direct the attention to the theory of the so-called pyæmia. It happens too often, he remarks, that metastases occurrring after an operation, are accounted for by the operation itself, while a post-mortem examination very often reveals a quite different cause. He, himself, has found very often the veins in the neighborhood of resected and carious places quite healthy, while the starting point was in a remote location. (See Gesammelte Abh., page 570.) Similar modifications have to be taken into account, with regard to phlegmasia alba. As a puerperal disease, it is often, and unjustly so, explained by an affection of the womb, which in many cases is found intact, and the disease very often is unconnected with the puerperal state. In cases of far spread varicose degeneration of the veins, it often occurs, that a muscular vein enters the muscle with a lumen of normal size, while the same vessel forms in the body of the muscle saclike enlargements, exceeding the normal size of the lumen four or eight times. Thus hidden entirely in the muscular tissues, these varicosities escape our attention, more especially because the constant muscular exertions are apt to keep up a perfect circulation of the blood, and thus every stagnation is prevented. But if, in consequence of some or other disease, the patient is kept at continued rest, the movement and circulation of the blood in these parts comes to a standstill ; if, moreover, the vital energy is lessened by exhaustion, if in consequence of fever the force of the heart's impulse grows less, it very often happens that thrombi are formed in these sacs of the intra-muscular veins, which may easily decay, and being swept along with the current of the blood into some remote organ, do here give rise to so called metastatic abscesses. This same process can be often observed in women laid up after delivery, where the uterus is found intact many times, while the entire process is localized in one extremity.

TAYLOR, C. F.—*The Pathology of some of the diseases incident to Women.—(Amer. Monthly*, xii., 2, August.)

Dr. Taylor's very able article discusses the question, whether a local or a constitutional treatment was, in most cases of uterine disease, most apt to effect a radical cure. His first and fundamental proposition is this: "In the majority of cases, prolapsus, versions, hypertrophies, and indurations, ulceration and irregular menstruation, are local symptoms of a constitutional condition." The first instance on which this thesis may be justly applied, is the imperfect involution of the uterus following parturition. It is not a mere local incapacity, but there must have been some disturbance of the circulation and the general nutrition, which prevented a perfect involution of the uterus. But even if there were only a local cause, it has become constitutional before treatment is applied, and should be treated as such. Another reason for believing that in so many cases the uterine trouble is merely the local manifestation of a general constitutional condition, is the patent fact, that all the most distressing symptoms may be present in cases where there is neither displacement, hypertrophy, nor ulceration. In very many cases, it was not the local treatment, but rather the necessary hygiene that was enforced, and above all, the time which led to a final recovery. There are in reality only few cases where the common method of treatment does afford permanent relief, and even in these cases, a general treatment would not only aid in the speediness, but in the permanence of the cure. The well-known frequency of uterine disease among American women, compared with those of other countries, is owing, according to Dr. Taylor, to the neglect of well directed and careful muscular exercise, and the early, almost exclusive, cultivation of nervous susceptibility. The consequence is, that few of our women have any adequate firmness of muscle, therefore a lower tone of physical health, a want of endurance out of proportion to the size of muscle, and the apparent general health. The effect of this condition of tissue in its tendency to the production of the diseases under consideration, may be considered under three heads, viz., that resulting mechanically from the lack of firmness in the tissues; the effect upon the circulation; and the condition of the general nutrition. The indications for treatment are therefore: 1. Relieve the uterus from the weight of organs above it by strengthening the muscles of the back, chest, and abdomen. This is the best pessary that can be used. 2. Relieve the uterine congestions, hypertrophy, &c., promote a peripheric circulation by muscular contractions in the extremities while the trunk and visceral organs are in repose. 3. Heal uterine ulcerations and correct abnormal secretions, secure a purer quality of plastic material by the increased oxydation of the blood, consequent on muscular action. But as muscular exertions performed in the ordinary way do often leave the patient

in a still worse condition, it is necessary that the muscles should be brought into action only in such positions, and in such a manner, that none of the symptoms following ordinary exercise can occur. The muscles of the arms and legs may be brought into the most powerful action, if necessary, while the patient is lying on her back, by the aid of assistants. Finally, to gain the greatest results with the least fatigue, let all movements be done very slowly, and the force of contractions increased by resistance opposed. Several very interesting cases are reported, illustrating the fact, that by muscular exertion alone (after the Swedish fashion), local uterine troubles, menstrual suppression, backache, and so called spinal irritation, were permanently cured. (We highly recommend this article to everybody who takes an interest in the progress of the art of healing.—E. N.)

H. Miller,—*Two cases of Encysted Tumor of the Ovary, successfully treated by Excision, and an attempt to justify the operation of Ovariotomy under certain circumstances. (Read before the College of Physicians and Surgeons of Louisville.)*—Amer. Jour. lxxiv. N. S. April.

Dr. Miller's article contains a report of two cases of multilocular cystic tumors successfully removed by the large abdominal section. The peduncles were tied in the usual way. The author proceeds to defend ovariotomy from a theoretical as well as a statistical point of view. His remarks are more particularly directed against the views taken by French surgeons in the discussion of the Paris Academy of Medicine, in 1856. He is of opinion, that iodine injections may have the desired effect in the treatment of unilocular cyst, while the same means would prove unsuccessful in the case of multilocular cystic disease. It cannot be doubted that English, and more particularly American surgeons, have been more successful in the performance of ovariotomy than the continental physicians. To explain this dilemma, Dr. Miller points to the after treatment of the operation by large doses of opium, a treatment already proposed and successfully applied by the father of ovariotomy, Dr. Ephraim McDowell, of Danville, Ky. (1809). Altogether the article is cleverly written, conveying a great deal of information on the most important points in connection with ovariotomy. Still in a paper, which seems to be intended to discuss the comparative value of the different methods for treating ovarian dropsy, there ought to have been mentioned, at least, the third and important variety of treatment, viz., opening of one or more cysts with introduction of a tube into its cavity. There are already too many successful cases recorded in periodicals, to eschew a discussion on this point in an article which takes so broad a view on the principal questions connected with treatment of ovarian disease. We must further inform Dr. Miller that the name, cæsarean section, is not derived from Cæsar, but from the latin verb, "cædere," to cut.

Hamilton, J. W., and Pope, Ch. A., *Cases of Ovariotomy.*—(Ohio Med. and Surg. Jour. January.)

Dr. Hamilton relates two cases in which he performed ovariotomy. In one, the tumor was removed, and the patient recovered. In the second, after opening the abdomen, the adhesions between the abdominal walls and the tumor, were found to be so firm, that it was impossible to separate them. A trocar was introduced, but no fluid was discharged. The wound was closed, and the patient expired forty-two hours after the operation. Dr. Hamilton gives an account of ovariotomies, performed in Ohio. As far as he knows, the operation has been performed in twenty-four cases; in eleven, successfully; in thirteen, unsuccessfully.

Dr. Pope relates four cases of diseased ovaria, in which he performed ovariotomy, two of which were successful, and two fatal. In one of the former, and one of the latter, the *ecraseur* was used to divide the pedicle.

Smith, R. K., *Vesico-vaginal Fistula.* (*Transactions of the College of Physicians of Philadelphia.*—Amer. Jour., lxxiv. April).

Dr. Smith reports a case of vesico-vaginal fistula operated upon and cured by Dr. H. Agnew. The button-suture was used, and Dr. Bozeman's button somewhat modified by the operator. It consisted of a centre-piece, with holes, and between this and the circumference on either side two half-moon shaped pieces were cut out. The advantage obtained by this contrivance, consists in enabling the surgeon to determine whether a portion of the mucous membrane of the upper wall of the bladder may not have insinuated itself between the edges of the wound.

Scanzoni *on the Treatment of Cystic Disease of the Ovary by Iodine Injections.*—Verhandl. d. phys. med. Gesellsch. in Würzburg, Bd. 9, Heft 2, n. 3, p. lxxxi.

Dr. Scanzoni reports two cases of injection of iodine for the cure of ovarian cysts, with unhappy results. The author believes this proceeding to be dangerous, although Boinet asserts that this injection is void of danger, because the opening in the cyst would in a few days be connected by adhesive inflammation with that in the abdominal wall. In the case reported by Scanzoni, this adhesion was not effected, but a portion of the lateral wall of the cyst was found connected with that part of the abominal wall where the puncture had been made, so that both openings stood apart from each other a distance of several inches.

Breslau.—*Four more Contributions to Midwifery and Gynæcology* —(Monts. f. Geburtsk. xiii. 6. June).

Dr. Breslau reports a case of a vesico-vaginal fistula, in which the entire anterior wall of the vagina was wanting, from the cervix uteri up to the insertion of the urethra, with callous unyielding edges, so that the ordinary operation for fistula was out of

question. Under these circumstances, he performed the episiorrhaphia after his method, and after three very difficult operations, only a very small fistula was left, just below the urethra. The patient could retain the urine for one or two hours when in the sitting or recumbent position, but it dribbled away as soon as she began to move. In the case reported, a great check to a speedy closing up of the wound, was found in the formation of considerable phosphatic deposits in consequence of the irritation of the vagina and bladder,—(under similar circumstances the internal and external administration of benzoic acid, does, if not entirely prevent, at least considerably decrease the formation of stony deposits.—E. N.) Dr. Breslau reports another case, where he removed a large fibrous tumor of the anterior lip of the vaginal portions with the *ecraseur.*

CORRESPONDENCE.

I.—*Remarks on the treatment of Traumatic Tetanus by the application of Ice to the Spine, with the Report of Two Cases.* By B. D. CARPENTER, M.D., Cutchogue, Suffolk County, N. Y.

IN the New York *Medical Times*, No. 2, Vol. 3, November, 1853, I published two cases of traumatic tetanus successfully treated by ice; since that time I have treated fourteen cases with like result except in one instance. A boy three years of age received a kick from a horse, crushing the outer plate of the frontal bone over the inner angle of the right eye, and somewhat breaking down the nasal bones. He was insensible for about two minutes after receiving the blow, then gradually recovered consciousness, and continued doing apparently well until the fourth day, when symptoms of inflammation of the membranes of the brain made their appearance, and in a few hours tetanic rigidity and spasm, the little sufferer expiring comatose on the seventh day from the accident. The other fifteen cases recovered perfectly, but I would not omit that all of them occurred in persons of good constitution, and of temperate habits, valuable adjuncts in combating disease. For the purpose of giving publicity to the treatment, I have extracted for publication the two following cases from my note-book as types, one of the acute, and one of the chronic form of traumatic tetanus as it occurs among us, and a fair illustration of the treatment and result in the sixteen cases that have been treated by me.

Case 1.—Aug. 15th 1858.—G. H., German farm laborer, aged 21; constitution and habits good. On the 12th inst. was thrown from a horse, falling with his back on a ridge in the road-way; the horse had also stepped on his right leg about an inch and a half above and behind the internal ankle-joint, causing a lacerated and contused wound having the appearance of being produced by the side and one of the calks of the shoe.

For the three following days he was confined to the house, and a part of the time to the bed, by reason of the pain in the bruised back, and the particularly painful character of the wound on the leg.

On the morning of the 15th becoming dissatisfied with remaining under the care of his employer's family, he started without their knowledge in the rain (the day being stormy) to walk about three miles, to the house of a German acquaintance of his, where he arrived quite prostrated from the fatigue of the walk in his condition, and soon complained of excessive pain in the wound of the leg, and in the lumbar region. The morning of the 16th I was summoned to visit him ; found him paralyzed below the lumbar region, with stiffness and soreness of the cervical region and muscles of the jaw, difficulty in swallowing and articulation, some pain at times at the lower end of sternum, slight headache, countenance anxious, skin dry and feverish, tongue slightly furred, pulse 120, inability to void the urine, bowels costive, parieties of the abdomen rigid as a board, wound granulating and healthy in appearance ; the discharge, however, soon changed and became thin and watery. Introduced the catheter and drew off a large quantity of urine having no unnatural appearance ; administered calomel grs. xij. to be followed by a saline cathartic. 7 P. M., skin moist, face covered with a profuse perspiration, whole muscular system perfectly rigid, great pain at the lower end of sternum extending through to the back, down the back, and through the leg that was injured; jaws firmly closed, violent tetanic spasms occurring at intervals varying from five, ten to fifteen minutes, drawing the body forcibly backwards and causing the patient to cry with the pain and violence ; pulse 120.

Introduced catheter with some difficulty owing to the action of the sphincter and other muscular fibres of the track through which it was to pass. Ordered pulv. Dov. grs. xij. every two hours, and sat. tinct. asafa. ʒiij. in ʒiv. of soapsuds, to be thrown into the rectum as often as the previous injection should pass away ; bladders filled with broken ice and kept free from water, to be applied and continued to the head and whole length of the spine.

17th, 7 A. M.—Some amelioration of pain at the sternum, less rigidity of general muscular system, inability to separate the jaws, spasms not quite so frequent or severe, pulse 110, varying, sometimes more frequent, introduced catheter and to continue treatment.

7 P. M.—About the same (patients are usually worse at night), introduced catheter and continued treatment.

18th, 7 A. M.—More decided relief of pain at sternum and considerably less general rigidity ; upon effort some motion of the jaws was accomplished during the interval from spasms. Ordered beef tea to be given through an opening caused by the loss of two teeth and through which the pulv. Dov. dissolved in water had been introduced ; this was the first nourishment taken since the commencement of the spasms and complete rigidity, there being

so much constriction about the throat and chest as to fear strangulation, indeed the tendency to suffocation was most alarming, so little motion of the chest and lungs was allowed that the face and lips never lost a dark mahogany hue but were often materially darkened, until there was this relief of tetanic rigidity; pulse from 100 to 110. Introduced catheter and continued treatment.

7 P. M.—Continues to improve. Can articulate some words indistinctly; introduced catheter, and to continue treatment.

The patient continued to improve up to the night of the 22nd during the sleep of which night he had the last spasm. Paralysis of the lower extremities continued twelve days longer and there was some tetanic rigidity for some days; he could open the jaws sufficient to receive food, but the process of mastication was often arrested from inability to control the action of the muscles, the articulation and process of swallowing were imperfect from the same cause; fearing strangulation, only fluids or semi-fluids were allowed. During the progress of tetanus, the spasms are readily produced by apparently trivial causes, loud talking in the room, a person rises from the chair, or attempts to walk across the floor touches the bed or bedclothes, attempts to feel the pulse, or to administer in any way to the patient without first gently breaking to him what he is about to do, he is certain to excite a spasm; so does there remain for a more or less length of time after the recovery, a peculiar irritability of the nervous system, often strikingly marked about the throat producing hesitancy in speech, sometimes arresting articulation in the middle of a word or sentence; the same arrest often occurs in the effort to swallow.

I remember being called in consultation with a medical friend to to see a boy of sixteen years laboring under acute traumatic tetanus, who recovered under treatment similar to that above detailed; in this case the muscles of the throat seemed so much involved that I advised the doctor to put the family on their guard against allowing any solid food for weeks after recovery; but the urgent requests of the boy overcome the impressions made by the Doctor's directions and the first attempt to masticate and swallow a piece of meat, made nearly three weeks after the doctor had discontinued his attendance, produced strangulation and the boy died in his chair at the table.

The Dover's powders were continued every four to six hours, to alleviate the pain in the leg and the general painful soreness of the muscular system; after the cessation of the spasms, blisters were applied over the lumbar region and ice continued to the head and spine not covered by the blister. The asafa. injections were continued sufficiently often and with a large quantity of the suds to produce two movements of the bowels every twenty-four hours. This course, together with the introduction of the catheter when necessary, was pursued until the third day of September, when the patient was discharged cured.

Case 2.—Oct. 24th, 1859.—B. E., æt. 11, a stout healthy boy.

On the 10th inst., he jumped on the point of a rusty nail, which entered the ball of the foot to the depth of half an inch. Domestic applications were made to the wound, and the boy confined to the house.

On the 19th he began to complain of sore throat and stiffness in the cervical region.

20th.—There was, in addition, some difficulty about swallowing and some impediment in articulation, slight feverishness and headache. During the night awoke crying that he had bitten his tongue.

21st.—The stiffness about the neck having increased with more dryness and heat of skin, and greater difficulty in swallowing and articulating, a physician was called in who opened the patient's bowels and gave him some Dover's powders; during the night he again cried out that he had bitten his tongue. Examination showed that he had done so in two places.

Lock-jaw being now suspected, the physician was again summoned, and found in addition to the general symptoms above enumerated, that there was some pain at the sternum and in the foot and leg previously injured, with slight general rigidity. Jaws not closed; wound was examined and appeared to be soundly treated. Continued the Dover's powders in larger and more frequent doses. I was then sent for, but being away from home, did not see him until the 24th, three P. M. He had then a moist skin, some pain in the head, stiffness of the neck and muscles of the joints, jaws could be opened five-eighths of an inch, except during the spasm, when they were forcibly closed. The teeth being irregularly set and the tongue not having been guarded, it was much swollen and the edges serrated and bleeding from being caught during the spasms between the teeth. Much pain at the lower end of sternum and through the leg and foot of the injured side, great tetanic general rigidity, pulse varying, in the morning 100, at night 110. The spasms during the day occurred at intervals of about ten minntes, increasing very much in frequency towards and during the night, particularly while sleeping, which was broken, though all the spasms were not sufficiently severe to awake him. The body was thrown forward, and the most violent of the spasms raised the head and upper portions of the body from the bed, and occasioned agonizing screams from the little sufferer. Lungs much constricted, discoloring the lips and face; countenance anxious and the mind depressed.

The physician in attendance stated that the patient had continued to grow worse since the commencement of the spasms on the 21st, that he had kept his bowels freely opened and given him pulv. Dov. grs. viij. every three hours. I ordered broken ice to the head and spine, and reopened the wound, fearing particles of rust might have been lodged and retained in it, the family stating that it had never discharged much; discovered nothing, wound appeared to have been nicely healed. Slippery elm saturated in

tinct. opii. to be kept applied to the wound ; Dover's powders to be continued as before, and injections of sat. tinct. asafa. ʒij. in two of soapsuds as often repeated as they were removed. This treatment was continued except that the quantity and frequency of the Dov. pulv. were gradually lessened up to Nov. 6th, when the patient was discharged cured.

Lock-jaw in man and other animals has always been prevalent on this end of the island since its first settlement, and has been always heretofore fatal when occurring during the warm months of the year; in man it less seldom occurs from wounds during the colder seasons of the year, while in animals it quite frequently occurs at those seasons of the year, but is not then so invariably fatal. I have several well authenticated instances of horses having been forced from the stables (where they had been placed for subjection to treatment) into the open yard, the owners thinking that they could not possibly survive the night and that there would be difficulty in dragging the carcass from the stall ; during the night a shower of rain, followed, as they often are in this latitude, by sudden and severe depression of the temperature, had first drenched and then chilled the apparently dying animals, and restored them to health and usefulness. I thus slightly allude to these facts as tending in some measure to corroborate the benefits to be derived from the application of cold in this disease, which in my hands has resulted in the perfect cure of fifteen cases out of sixteen, and in that case death was the result of the combined causes of inflammation of the membranes of the brain and traumatic tetanus, while it was successful in one case above related complicated with paralysis of the lower extremities caused by injury to the spine.

II.—*Cataract in both eyes of a child.* By C. K. FISKE, M.D., of New Brunswick.—November 9th, 1858.

Mary Disbrow, aged eight years, daughter of the Reverend Mr. Disbrow of this city, has had cataract in both eyes during the last four years.

The right eye having become blind some months before the left, has fallen off from the line of vision, having an outward cast, *strabismus divergens.*

I broke up the lens and capsule of the left eye freely, through the sclerotic, using a straight needle with rather long cutting edges.

The lens was firmer than would have been expected in so young a patient, but with great care I succeeded in dividing it enough for the process of solution to go on.

By the necessary means to keep the pupil dilated, and to prevent inflammation, the case went on favorably for several weeks, but absorption proceeded slowly, and the parents of the child became anxious, and feared another operation would be necessary.

Dec. 10th.—The lens suddenly fell in pieces, several portions falling over into the anterior chamber, and during the next three weeks it was interesting to observe the gradual solution of these fragments, when early in the following month they all disappeared, leaving a clear, deep pupil.

During the process of the solution the iris was kept under the influence of belladonna, by the frequent application of the extract to the lids and brow, dilating the pupil enough to guard against inflammation, by contact with the broken lens.

In the month of February, the little patient learned to read, and to play cleverly at draughts without the aid of a glass.

March 10th.—By the request of the parents, I performed the same operation upon the lens and capsule of the right eye. This lens was less firm than the first, being more easily divided, and, consequently, was less time in being dissolved, and by the middle of April it had all disappeared, leaving the sight as good as in the left eye.

On examining the eyes in May, I found them free from all irritation and redness, with less strabismus than before the operation, and in June the patient was able, by a little effort, to bring both eyes into the proper line of vision, making it quite probable that they will ultimately come straight. At the present date the sight is good, for distant and general vision, without the aid of glasses, but the latter are needed for reading small print.

August, 1859.

III.—*Extensive fracture of the skull, with hemorrhage from the ears, nose, and mouth.—Recovery.* By Geo. L. Andrews, M.D., of Laporte, Indiana.

W. H. A., a lad 11 years of age, was thrown, on the evening of the 20th of August, with considerable violence, from a lumber wagon, and the wheel passed over his head. He was taken to a house near by, and I saw him in about an hour and a half after the accident. His clothing was saturated with blood, which had issued from his ears,* nose and mouth. His respiration was stertorious, and about 15 to the minute, pulse about 120, and scarcely perceptible. The entire surface was cold and clammy, and he could be aroused to partial consciousness. An examination showed a comminuted fracture of the right side of the skull, commencing about midway between the supra-orbital notch and the internal angular process, thence extending upward and outward at an angle of about 35° with the median line, three inches; thence in the direction of the auditory foramen, until its exact

*Those who saw him immediately after the accident, aver that a considerable quantity of blood issued from the right ear; when first seen by me this had ceased. Neither was there at any time thereafter any serous discharge from the ear.

locality was lost behind the temporal muscle. It became again traceable at the external angular process, and extended thence across the lower margin of the superciliary ridge to the point first mentioned. The edge of the orbital plate was plainly perceptible to the touch, and the pressure upon the globe of the eye from above, dislocating it downwards, rendered a fracture of the orbital process further back, highly probable ; in fact the appearances presented could be explained in no other way. A portion of the outer table, just outside of the supra-orbital notch, was driven inwards, showing a depression about five lines in diameter. There was a small bruised space a little behind the frontal eminence ; the right ear was torn rather than cut, at the point of its union with the scalp, for the space of $\frac{3}{4}$ of an inch, and only *to* the cartilage of the auricle. A very trifling wound of the helix of the left ear, and a slight bruise on the right shoulder, completed the catalogue of external injuries. The fractured portion was easily moveable, though not depressed ; the right side of the forehead was black, and the conjunctiva of the right eye crimson with extravasated blood. As he lay on his back, no blood flowed externally, but every few moments deglutition could be perceived, and about every half hour the blood thus swallowed was rejected, the vomiting being twice accompanied with convulsions. In about two hours the discharge of blood ceased, and reaction took place to the extent only of warming the surface and extremities, and rendering the pulse more full and somewhat less frequent. His clothing having been carefully changed, and absolute quietude enjoined, it was deemed best to wait for further indications.

21st, 8 A.M.—His skin is moist and warm, pulse 100, moderately full and soft. He declines swallowing anything, either solid or liquid, has vomited but once since ten o'clock last night, and then a very little blood ; is more easily roused ; ecchymosis has extended to the left eye, injecting the conjunctiva and closing the lids. He complains of pain "all over" the head, but not very severe. A thin strip of linen dipped in cold water and laid over the eyelids is agreeable, but he objects to any more general application.

2 P. M.—Commenced calling for water soon after last report, and has had a tablespoonful occasionally. About 11, vomited the water he had swallowed—tinged a brownish color, probably by the decomposed blood left from last night's hemorrhage. No further change to report.

8 P. M.—Has rested well, only waking occasionally from an apparently natural sleep, to call for water. Pulse 96, soft, moderately full ; skin warm and moist ; says that his "head aches a little."

22nd, 8 A. M.—Rested well during the night, only calling about once in two hours for water ; pulse 100, still and compressible ; heat of head, accompanied with headache considerably increased; thirst less urgent than during yesterday, and wishes (for the first

time) some food ; to have the hair cut closely and iced water to the scalp, and a small quantity of water gruel.

12 M.—Head considerably relieved, but wishes the continuance of the cold to the scalp. Pulse 96, softer.

8 P. M.—As at last report ; continue treatment.

23rd, 8 A. M.—Passed the night comfortably ; has more head ache than last evening. The swelling has so far abated that the lid of the left eye can be readily lifted, and he avails himself of the opportunity thus afforded, to take an occasional observation. Is awake the greater part of the time since 5 o'clock, and entirely rational ; wishes to know what is the matter, and denounces his "slop ;" to have an enema of soap and water, the cold applications to be continued, and a change to such other farinaceous preparation as will meet his views. He steadily declares that he will eat nothing short of a beefsteak, but ultimately "declines his expectations" to a plate of rice and cream.

2 P. M.—Enema produced a copious and healthy discharge, much to the relief of his head. The swelling of the lids is rapidly abating. Pulse 88, and appetite insatiable.

Not to cumber the report unnecessarily, I will only state, in brief, that I continued to see him every few hours for some ten days longer, and that no untoward symptom arose during the entire treatment of the case. Twice only did I prescribe *any* medicine, and then only small doses of sul. mag. and pot. bitart. The swelling and pain steadily abated. There was never so much fever that it could not readily be controlled by the means aforementioned. On the 6th day he opened the right eye for the first time since the injury, and was much amused that everything *seemed double.* This diplopia disappeared about the 12th day as to short distances, but continued as to distances of, say, four or five feet and upwards. On yesterday (Oct. 10) he called to bid me farewell, as he was about to return to his home in Nebraska, when I found that the double vision had not yet entirely disappeared, though it was very much lessened, and could be remedied entirely by a slight inclination of the head to the left, by which he looked at the object *across* the right side.

IV.—*A Rare Form of Fracture of the Lower-jaw, involving both neck and body, treated by a novel method.* By E. J. Fountain, A.M., M.D., Davenport, Iowa.

The following case of extensive fracture of the lower-jaw, offered many serious obstacles to a permanent reduction, which were finally overcome by a new and simple mode of treatment. Its successful application after the failure of all ordinary methods which had been faithfully tried, renders it of sufficient value to lay before the profession. The importance of realizing a perfectly successful mode of treating fractures of the *neck* of the lower-jaw will be appreciated when it is observed that *Malgaigne* reports

a number of unsuccessful attempts to effect a permanent reduction of this fracture by several of the best surgeons of Paris, and that most of our standard authors on surgery are entirely and strangely silent upon the subject.

In the Spring of 1856, W. G——, aged 42, fell from a height about ten feet, striking his chin upon a hard piece of timber. The result was a fracture of the lower-jaw through the body on either side, and also through the neck of the condyle on the left.

The deformity was characteristic of fracture of the neck—namely, a displacement of the whole of the lower-jaw backwards and laterally to the side of the fracture. The middle portion was disconnected by simple fractures without displacement, around which the membranous and muscular tissues held sufficiently firm to admit of sufficient traction upon the part posterior to the middle fragment by force applied to the latter in the region of the symphysis. By careful manipulation crepitus could be felt at each point. Upon releasing the traction in front, the deformity immediately returned, by which it became evident that the fracture through the neck was oblique, permitting the retractive force of the muscles to reproduce the deformity as soon as the force which held it in front was removed. It became evident at once that to retain this fractured portion permanently in apposition so as to prevent deformity, would be the greatest difficulty. A temporary application of the pasteboard splint and four-tailed bandage was applied, and ordinary measures used to guard against excessive inflammation. During the following eight days, I tried every form of dressing by splints and bandaging that my ingenuity could devise to effect a *permanent* reduction of the fracture of the neck, and in this I was assisted by two skillful surgeons, Drs. O'Reardon and Adler, but all to no purpose. The middle fracture gave me no trouble, but in arranging the fractured neck, I could derive no aid from my friends, and found no light to guide me by consulting our text-books on surgery. There was no difficulty in properly reducing the fracture, but after laboring for hours with all manner of appliances to retain it in place, I would invariably find the chin slipping back, and to one side, until in a very short time the original deformity would be entirely restored and our united efforts completely baffled. On the eight day after the injury we all labored for several hours to secure a correct and permanent position of the parts, and had finally to abandon all our efforts as ineffectual. The case was now a truly distressing one. The family became impressed with the belief that it could never be accomplished, and the prospect of a serious and unsightly deformity for life created an anxiety and grief which can hardly be described.

A method then occurred to me which I at once announced as a *sure* way and the *only* way by which deformity might be prevented, and the parts made to unite permanently in their true position. The jaw was displaced backwards and laterally towards the in-

jured side. By firm and steady traction it could be brought out in place, and now the question was *how* to retain it there. It became evident to me that some unvarying, persistent force must be applied to a fixed point in such a manner as to take the place of my hand or the instrument used in bringing it out and holding it there. The anterior portion of the superior maxillary, or its prolongation by the teeth presented this fixed point, and by *drilling holes* in one or more of the upper and lower teeth in front, and firmly *wiring* them together in their natural position, the lower-jaw must of necessity be prevented from falling backwards or to one side. Wrapping wire around the teeth could not be depended upon. The holes drilled for this purpose I thought could be easily filled by a dentist and thus preserved; and even though much injured or destroyed, how trifling this loss compared with a lasting deformity of the whole jaw—unsightly in appearance, and serious in its effects upon the voice and mastication. I at once obtained the services of a dentist to drill the teeth, which was found to be no very light operation, owing perhaps to a want of proper instruments. In order to make sure of a perfect reduction of *lateral* as well as backward displacement, I had the holes made in such a manner that the traction of the connecting wire would not only hold the two bones firmly together, but also draw the jaw to the side *opposite* the fractured neck, in order that the loop of wire might not, like a link, swing slightly to one side by the muscular contraction. I therefore had a hole drilled directly through a front incisor above, and another through one below, not directly opposite in their natural position, but through the one adjoining it on the side towards which the bone was inclined to be drawn. Through these I passed a double strand of fine annealed iron wire, such as is used by jewelers, and drawing the lower-jaw forward in its place and holding it firmly against the upper, by aid of assistants, I twisted the wires tightly together. The success was complete. There I now had it exactly in place, and as long as the wires should hold there was no possibility of the slightest displacement.

After this was accomplished the other fractures were easily managed. A pasteboard splint was moulded about the whole of the lower-jaw, and retained by the usual four-tailed bandage. The patient had no difficulty in taking liquids which were easily drawn into the mouth between the teeth, and by this means he was nourished for the *four weeks* during which he patiently endured this artificial *lock-jaw*. In about ten days the wires gave way, and I immediately inserted another cord composed of four of the same wires, and this held the jaw securely and immoveably fixed until the fractures were all united.

I removed the wires after the jaw had been thus secured for four weeks, and found that perfect union had taken place at all the points of fracture, *without a particle of deformity*, except such as necessarily resulted from the provisional callus. This was in

time gradually absorbed, and now, nearly four years since the accident, no one can tell by his appearance, or by an examination, that any fracture had ever taken place.

Malgaigne devotes but a very short chapter to fractures of the neck of the lower jaw, consisting mostly of a gloomy account of unsuccessful attempts to treat it by some of the best surgeons of the French metropolis, and proposing nothing better to redeem the practice. Fergusson, Miller, and Druett, say nothing about it.

The rarity of this fracture is no excuse for such culpable neglect on the part of authors, who profess to furnish students and the profession with complete works on surgery.

Of its great rarity we are assured by *Malgaigne*, who says :

"This fracture is extremely rare, and for my own part, I have never seen it. It appears to have been observed by Soranus, after which no more mention of it occurs until the time of Desault, and I know at present but eight published cases." Of these cases, a very imperfect history is given ; in fact, no history at all, only a few facts connected with some of them.

In the two cases observed by Desault, the fracture was caused in each by a fall upon the chin, as in the one I have reported. In one case treated by Ribes, and another by M. A. Bérard, the injury was produced by blows upon the side of the bone corresponding with the fracture. It is not stated in what manner the force was applied in the other cases. In one quoted from M. Howzelot, "there were found fractures of both condyles, of both coronoid processes, and of the symphysis."

Diagnosis.—This is not difficult. The diagnostic feature of this fracture, when but one side is involved, is *mobility, and a displacement of the whole contour of the lower-jaw backwards, and laterally towards the fractured side.* An apparent exception to this will be presently noticed. Mobility alone is not sufficient, as this may result from a fracture through the upper part of the ascending ramus; yet this is made, by Soranus, a means of diagnosis between fracture and luxation. "*Fractura quæ fit ad rostra maxilles raphani modo, dignoscitur quod moveatur dum ope digitorum adducitur ; luxata vero immobilis sit usque ad sejunctionem.*"

The phenomenon of a deviation of the chin towards the fractured side, is pointed out by Ribes, but was unnoticed by Béchat, by whom a case was treated.

It results naturally from the unopposed action of the pterygoid and temporal muscles, drawing the body of the bone upwards and backwards. The important influence of the temporal muscle in this particular, is not noticed by Malgaigne.

As will be readily understood, in a fracture of both condyles, the chin, with the whole body of the bone, will be drawn directly backwards. In some cases, there may be no deformity at first, in consequence of the fracture being transverse, and the blow sufficient to produce the fracture merely without separating the fragments. In such cases the deformity is liable to occur afterwards,

as in a case reported by Bérard, by any disturbing force, as manipulation by the surgeon, or motion produced by muscular action.

Treatment.—Where the fracture is transverse, the treatment may be easily and successfully managed by the simple and ordinary method of the pasteboard splint and *fronde*; and the latter alone might possibly answer. But it becomes a far different matter, when the fracture is oblique, permitting the muscles to act constantly in displacing the bone. Perhaps in no other instance does the form of the fracture make such a vast difference in results. While in the transverse fracture, the treatment may involve but little difficulty, yet in other cases, the best surgeons have failed in their efforts, and left their patients deformed for life.

I quote the following from *Malgaigne:*

"A surgeon in Paris," says Ribes, "was called to a student of surgery, who had a fracture of the body of the jaw-bone, and another of the neck of the condyle: *in spite of the most assiduous and skillful attendance, the patient recovered, with the chin drawn to the same side as that of the fractured condyle.*"

Again, "Ribes himself had to treat (in the second year of the French Republic) a patient with a similar fracture on the left side; and in spite of all his care in applying the means then in use, *the result was the same as in the foregoing case, the chin being twisted towards the fracture.*"

The directions given by Malgaigne for the treatment are as follows:

"Reduction being accomplished, the jaw is pressed upward and backward, so as to fix the condyle between it and the glenoid cavity; it is then closed, and retained in place by means of a four-tailed bandage!"

Malgaigne makes the mistake of supposing that the great difficulty consists in accomplishing the reduction, after which he appears to think the ordinary dressing will retain it in place; a fatal mistake, which he could not have made, if he had ever experienced the difficulty of treating a case. No one appears to have noticed how much depends upon the form of this fracture, which accounts for the recovery of a few without deformity, and with but little care in treatment, and also for the singular fact that others have baffled the skill of the best surgeons.

The reduction can be accomplished without much difficulty, and then, if the case is like the one I have reported, the treatment recommended by Malgaigne will be found to be utterly worthless, and nothing short of the plan which I have introduced, will completely answer the purpose. It is singular that "the student of surgery," in the midst of the scientific ability of the surgeons of Paris, should have been allowed to recover with a terrible deformity for life; and another treated in the same emporium of surgical skill by the distinguished Ribes himself, with no better success,—singular indeed, that such unfortunate results should

have been permitted, when a little ingenuity might have suggested a *simple, sure, and easy method* of preventing deformity. Such cases must stand as monuments of a lack of skill, humiliating and astonishing, since it has been demonstrated how easily and effectually the remedy can be applied.

The case which I have reported occurred nearly four years ago; and I am now induced to offer it to the profession, by reading the above cases in Malgaigne, and noticing how serious would be the mistake of trusting to the mode of treatment which he directs. Though such cases are indeed extremely rare, yet this report will accomplish an object worthy its publication, if it may be the means of preventing even one such deformity as was fixed upon the patient of Ribes, and the unfortunate student of surgery.

V.—*Treatment of Obstructions of the Lachrymal Passages.*

Editor of the New York Journal of Medicine:—The enclosed report of the successful treatment of a case of obstruction of the tear duct, which has been kindly sent me by Dr. Shepard, is well worthy of publication. Dr. S. was, indeed, forestalled by Bowman and others, in the treatment here adopted, but the idea appears to have been none the less original with him, and he deserves much credit for the ingenious manner in which he put it into execution. If city surgeons were obliged to manufacture their own instruments, "with the assistance of a watchmaker," there would be fewer brilliant operations reported, I suspect.

Dr. Shepard certainly has reason to be gratified with his success in the treatment of this case; at the same time, it is to be feared that this method is not applicable to the majority of cases of lachrymal obstructions. Mr. Bowman, who first proposed this method, thus speaks of it:

"Rather more than a year ago, I contrived a mode of inserting a style by the canaliculus, and leaving it for a certain time in the passages, in order to open them on the principle of the old style. The style was made to taper rather suddenly at one end, and it was bent at about a right angle, so that the thick part should be placed vertically in the sac and nasal duct, and the thin part horizontally in the canal. The length of the thick part was adapted in each case by the surgeon, so as to extend from the point at which the canal enters the sac downwards as far as the floor of the nostril on which it rested, being thereby prevented from falling too low, and burying itself out of sight. The proper length was ascertained previously by measurement with a probe. The horizontal part was, in like manner, adapted to reach to a point of the canal midway between the caruncle and the punctum, and a bend was given to it, making it lie exactly within the canal, concealed from view in the channel formed by the slitting up of that passage. The material was silver, and the ends, after being

cut to the requisite length, were carefully rounded, and the thin one tipped with sealing wax."

"These *bent styles*, when suitably adjusted, I found could be generally worn with very little inconvenience for a few days, and admitted of being readily removed and reinserted, and I still employ them when the stricture is dense and obstinate, or when a rapid opening of it is required. But they sometimes occasion trouble, and become a source of irritation, and they may even produce ulceration of a portion of the canal, if badly fitted, or if left in too long, as, for example, when the patient has absented himself during the treatment. I, therefore, prefer to treat the obstructions in almost all cases by the intermittent use of the probe, as already described, and especially as the results by that method are so satisfactory. I do not recommend the bent styles for general adoption."—(*Ophthalmic Hosp. Rep.* October, 1857.)

Hollow styles, like the one used by Dr. Shepard, might be supposed to be an improvement upon the solid ones, described by Mr. Bowman. It is very questionable, however, if such is the case. Our experience with tubes worn in the trachea, after tracheotomy, and with permanent catheters, shows how difficult it is to keep such channels free from obstruction. I have been informed by those who have seen the working of the much vaunted drainage tubes of Chassaignac, for the evacuation of cold abscesses, that no matter comes through the tube a short time after its insertion, but that it all flows out by its side; so that these tubes act like an ordinary seton of india rubber. It is difficult, if not impossible, to substitute a tube with dead walls, for a natural channel endowed with vital force. Hollow styles, introduced from the lachrymal sac into the nose through an opening in the integument, which was afterwards closed over them, have already been tried and abandoned, because it has been found that the cavity of the tube soon becomes obstructed by the secretions. Even in Dr. Shepard's case, I do not feel confident that the tears did not find their way by the side of, and not through the tube.

After all, permanent styles, of whatever form, are objectionable. The aim of all treatment should be, to restore the parts as nearly as possible to their original condition, and to the exercise of their natural function. The great merit of Mr. Bowman's treatment consists in its doing away with the permanent use of styles altogether. At the same time, they may be used temporarily in the manner recommended by Mr. Bowman and Dr. Shepard, with benefit, but they require careful watching. Since the spring of 1858, I have in several instances employed them in the manner above described, but have encountered the difficulty mentioned by Mr. Bowman, that they were apt to cause irritation, especially in females.

Mr. E. C. Hulme, in the *Medical Times and Gazette*, for May 21, 1859, recommends the surgeon to provide himself with a set of wires, made of "virgin silver," and of various diameters, from

that of a fine hair probe to one-fifteenth of an inch, and, after slitting up the canaliculus, to introduce one of these through the tear ducts to the nose. The upper part of the wire is then bent over the edge of the lid, and cut off with a pair of nippers, so as to leave about a quarter of an inch, which is attached to the integument, by a small piece of plaster, to the inner side of the caruncle, where there is hardly any motion of the lids. In the course of three or four days, a larger wire is inserted, and so on, till the natural diameter of the passages is restored, when the wire is to be withdrawn. Mr. Hulme proposes this slight modification of Bowman's method, as a speedy mode of dilatation, of special value with hospital patients.

In a case like Dr. Shepard's, I should hope that the style might now be abandoned, and that the continuity of the passages was sufficiently established to prevent a relapse, or, if necessary, the probe might still be used at intervals, to obviate any tendency to contraction. Respectfully yours,

F. J. Bumstead.

282 *Sixth Avenue, December* 20, 1859.

Dr. Bumstead :—*Dear Sir* :—After reading your report of the New York Eye Infirmary, in the *New York Journal of Medicine*, for July last, in which you speak of Dr. Bowman's treatment of obstructions of the lachrymal passages, I have thought you might be interested in a case which has recently been under my care, of obliteration of the tear duct produced by a wound from the shoe of a horse at the inner angle of the eye.

Mr. J. N. Cook, a blacksmith by trade, now thirty-five or forty years of age, when a lad about twelve years old, was thrown from a horse and stepped upon ; the horse's shoe producing a wound as above stated. A fistulous opening communicating with the lachrymal sac was produced, which was closed by an operation several years afterwards, but troublesome epiphora of the corresponding eye still remained. Several unsuccessful attempts had been made by different surgeons to remedy this evil, without the use of the old fashioned style ; Cook refusing to have the latter inserted, because he thought it worse than the disease.

When in New York last February, I saw you and Dr. Agnew slit up the canaliculus for epiphora dependent upon everted punctum, and also dilate the strictured tear passages, by means of probes. Finding the punctum of Cook's lower lid somewhat everted and very small, I slit up the canaliculus as far as the caruncle, and then introduced a medium sized probe into the sac, and made thorough search for the opening into nostril, but became satisfied that the lower part of the sac was obliterated. With the assistance of a watchmaker, I made a fine trocar, canula, probe, and hollow style, neither of which exceeded one-sixteenth of an inch in diameter. The hollow style was about one inch and a quarter long, with its upper extremity, for a short quarter of an inch, bent nearly at right angles. I used these in-

struments in the following manner: I introduced the probe (which was of uniform size the whole length) into the sac, slid the canula of the trocar over the probe, withdrew the probe, introduced the trocar in its place, and pushed it into the nostril. I then withdrew the trocar, passed the probe through the canula into the nostril, slid off the canula, leaving the probe in position, passed the hollow style over it, and finally withdrew the probe, leaving the hollow style reaching from the eye to the nasal cavity. The short arm of the style rested in the slit up canaliculus, which entirely concealed it from view, except when the lower lid was everted by the finger.

During the first week after the operation, I removed the style three or four times, sliding it out and in over the probe which I introduced for the purpose. Since that time, it has remained constantly in place, and has *perfectly* remedied the epiphora, without causing the *least deformity or inconvenience.* It has now been worn for six months without removal, and the patient says that he does not feel its presence, and that he intends to wear it as long as he lives. When the tube becomes partially obstructed (which is very seldom the case), Mr. Cook simply draws the angle of his eye towards the nose, closes his nostrils, and forces the air through the tube, when all obstruction is removed.

I think this operation will remedy most of those cases of organic obstruction, for which Dr. V. Græfe recommends obliteration of the sac, and that it might also be used to advantage in cases of obstruction from simple stricture, when patients live at some distance from the surgeon, or, from any cause, cannot attend often enough to have the stricture dilated. Perhaps the operation has already been performed by yourself or others.

Respectfully yours, CHARLES SHEPARD, M.D.

Grand Rapids, Mich., Nov. 28, 1859.

EDITORIAL.

A friend has handed us the following notice of a paper intended to represent the history and progress of obstetric science in America, which was read before the Leipsic Obstetrical Society, and published in the Berlin *Obstetrical Journal (Monatsschrift für Geburtskunde,* etc.) of October, 1859. Its author is Dr. Eisler, a Hungarian by birth, a resident of this city for the last six years:

"After some general remarks on the condition of the healing art and the hospitals, in the United States of America, the doctor proceeded to give a sketch of the physicians, dividing them into 1. Physicians born and educated in the States; 2. Native physicians educated abroad; and 3. Foreign physicians, most of whom were Germans, and more particularly from the State of Bavaria. Hospitals are erected for the purpose of medical instruction, generally by the coöperation of a number of physicians, who then, calling themselves professors, represent a medical faculty,

or college, two of which are in the city of New York ; these latter are rivals in the creation of doctors. With the exception of the State of Michigan, the formation of colleges is effected all over the United States by private contributions. In New York more especially, be it remarked, the science and art of obstetrics has been taught only during the last three years ; this institute is but very little known as yet, and has very little material at its disposal. Therefore, the science of obstetrics takes here (in New York) a very low rank ; the works on obstetrics consist only of translations, or reproductions, with annotations. Seven-eighths of the obstetric practice is in the hands of physicians, only one-eighth being under the care of midwives ; these latter being almost exclusively limited to the Irish and German, the cause of which may be found in the fact, that the American women know very well that there exists no general institute for the systematic education of midwives. The charlatans and quacks generally abstain from practising midwifery, because the knowledge of anatomy is needed in attending on midwifery cases ; therefore, this department remains almost exclusively in the hands of physicians. Several hundred thousand dollars are spent yearly in New York for abortive remedies which, however, have no effect. The cause of this may be sought in the disinclination of native American women to work ; they being afraid to have more than one or two children to rear. The husbands of these women procure the abortive remedies themselves, partly from other men, partly from women who have proper establishments for the said purpose, and who make their business publicly known by hand-bills, which they distribute among women and girls. The most extensive business in this line is done by Madame Restel, of New York, who has become widely known by the numerous recommendations of her agents, and who has realized already several millions of dollars by procuring abortion, and by the sale of her pills. Among the remedies used during difficult parturition, the ergot of rye takes the lead, which is prescribed in very large doses, half a drachm every quarter of an hour. American women, in consequence of the inactivity of their lives, are very much inclined to muscular and nervous prostration, so that the pains lose their force most generally during the last stage of labor. For the same reason, the forceps is very frequently applied. Every third or fourth delivery is effected by this instrument, even when no indication for its use was present. Puerperal fever is very rare. The author, who attended 480 deliveries in the course of 6½ years, has not seen one case of puerperal fever ; still, in 1856, a few cases were observed. Of much more frequent occurrence is eclampsia ; but it seldom has a fatal result ; much opium and chloroform is given in this disease, and under this treatment, Dr. Eisler did not lose a single case, while two died under a different treatment. He has had no occasion to perform cæsarian section."

We desire to inform the members of the Leipsic Obstetrical Society, before whom this luminous paper on the state of the science and art of midwifery in New York was read,

1. That the science and art of midwifery began to be taught in the city of New York, in a regularly organized medical institution, in the year 1767, or ninety-three, instead of three years.

2. That there are now in New York three medical institutions, of wide-spread reputation, in which the theory and practice of midwifery is taught, and clinically illustrated in the most systematic and rigid manner.

3. That abortion is rarely, if ever, deliberately produced, where the parties are married; the laws are so stringent in regard to procuring abortion, that no person has ever ventured to profess the business, much less to publicly advertise the same.

4. That ergot and the forceps are comparatively rarely resorted to, except among the ignorant practitioners of midwifery.

5. That puerperal fever occurs periodically, and with great severity in our hospitals, and is frequent disease in practice.

6. That eclampsia is of "frequent occurrence," is more often fatal than otherwise, and is not often treated with large quantities of opium or chloroform.

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NEW YORK JOURNAL OF MEDICINE

Dr. LIDELLS CASE OF NEUROMA OPTICA

BEFORE THE OPERATION.

ONE YEAR AFTER OPERATION.